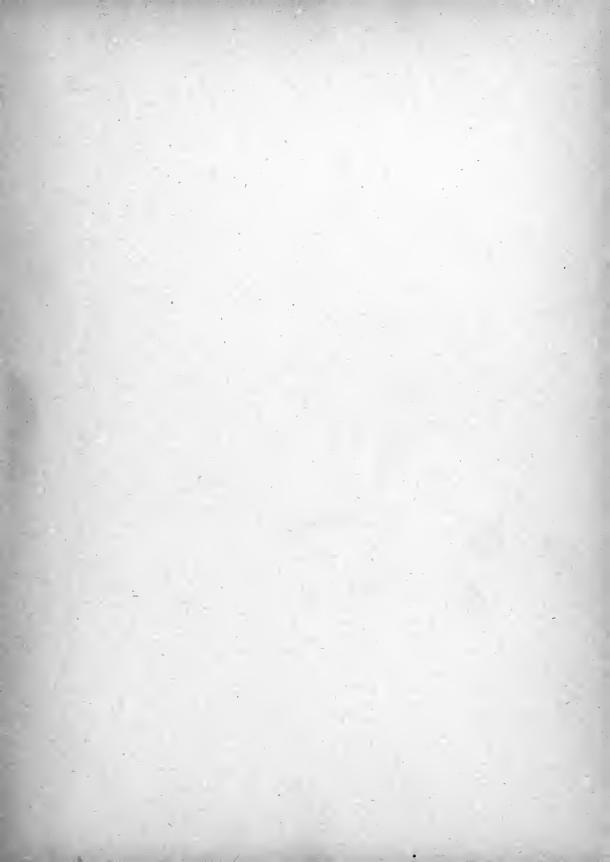
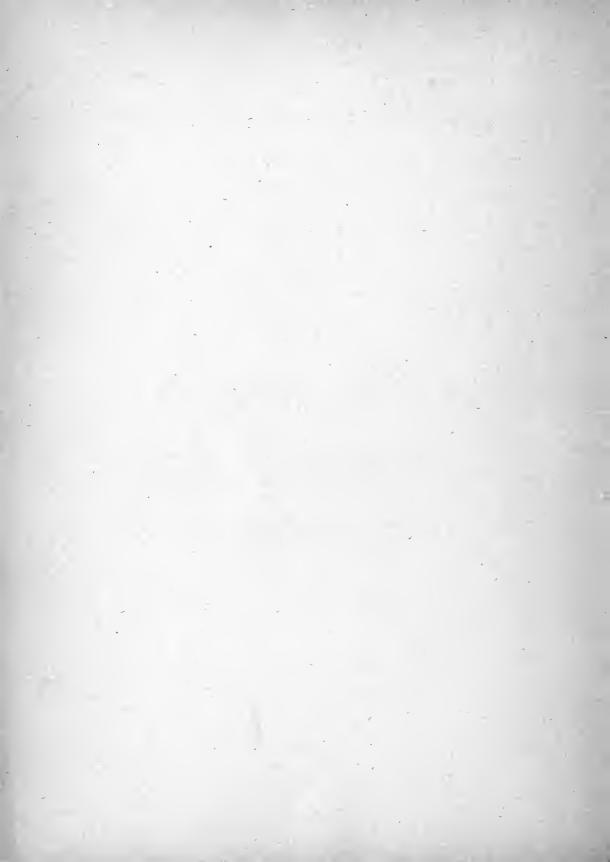


- Curches Egyp, of A. Leves





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LOUISIANA PURCHASE MONUMENT—On this stately shaft, one of the striking features of the plaza, were these words: "The instrument we have signed will preface centuries of happiness for innumerable generations of the human race. The Missouri and Mississippi will see them prosper and increase in the midst of equality under just laws."

THE BOOK OF THE FAIR

By MARSHALL EVERETT,
The Great Descriptive Writer, Author and Historian

The Greatest Exposition

The World Has Ever Seen.

PHOTOGRAPHED AND EXPLAINED.

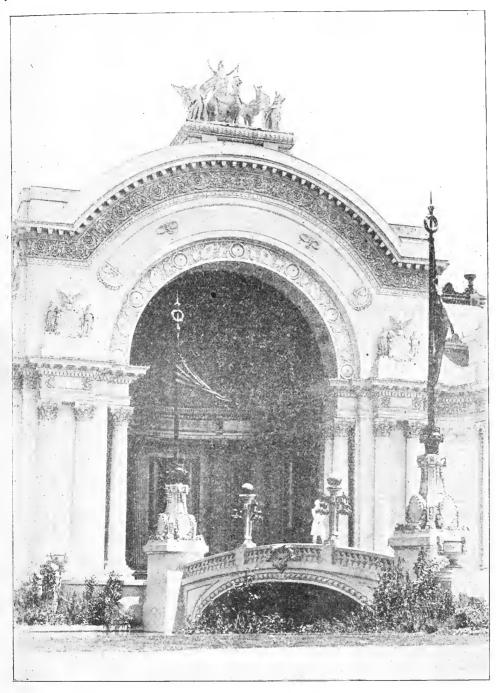
A Panorama of the St. Louis Exposition

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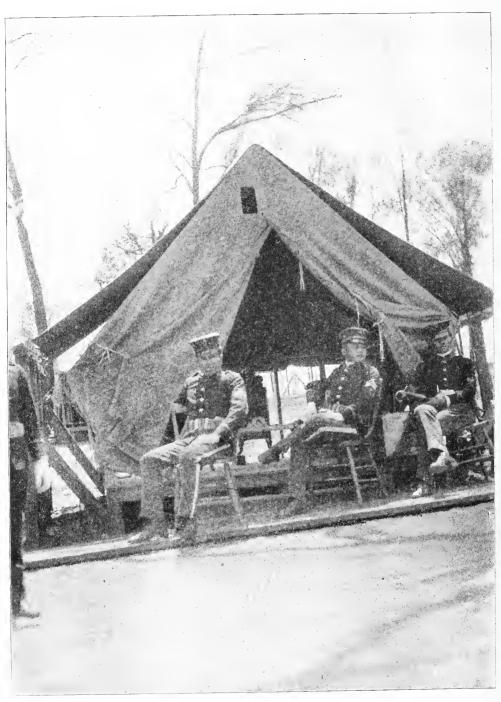
A Vast Gallery of Pictures Showing all the Fair in Photographs

P. W. ZIEGLER CO., PHILADELPHIA,

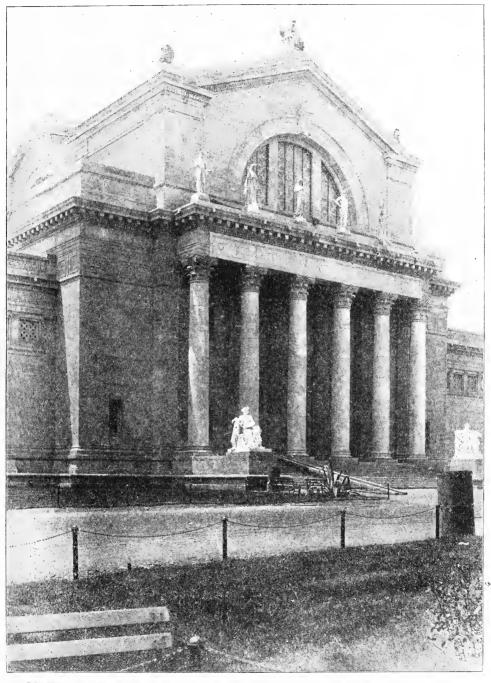
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HENRY NEIL
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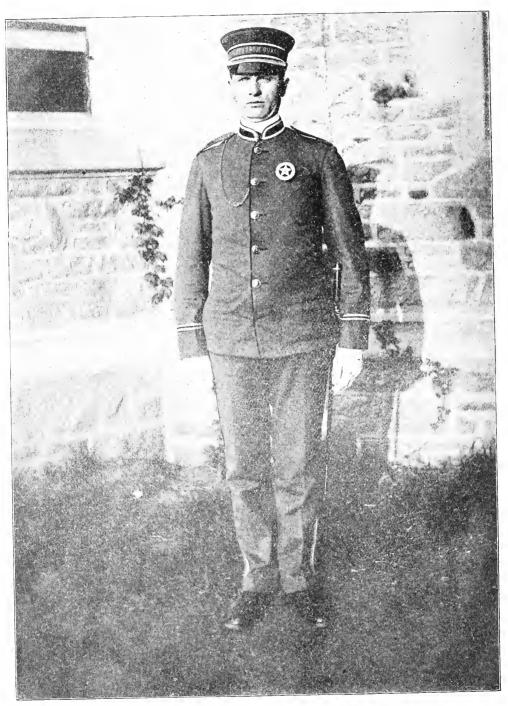
MAIN ENTRANCE TO MANUFACTURES BUILDING—The massive, imposing main entrance to the Palace of Manufactures is in keeping with the importance of the exhibits within. Above is a grand group signifying the triumph and power of manufactures, with bees and other symbols of the industries embellishing the grand sweep of the arch itself.



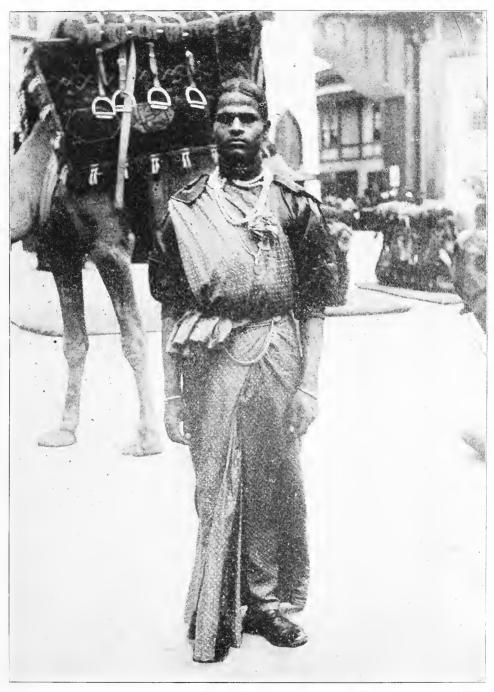
FILIPINO CONSTABULARY IN CAMP—Not the least interesting feature of the fair was the big camp where the newly organized military police from the Philippine islands were quartered. They were a happy lot, these dusky little soldiers, and enjoyed their stay immensely. The camp was constantly surrounded by curious visitors from near and far.



MAIN ENTRANCE TO PALACE OF FINE ARTS—In the architecture of its main entrance the Fine Arts building of the Louisiana Purchase Exposition was a beautiful illustration of the plain and classic, minus the severe. It might have been a Grecian temple transplanted from the golden times of the Land of Fine Arts.



JEFFERSON GUARD ON DUTY—An army of these young men policed the extensive grounds of the exposition. This force was fashioned after the Columbian Guard, similarly employed at the World's Columbian Exposition at Chicago, ten years before. It maintained discipline, prevented disorder and co-operated with the police secret service.



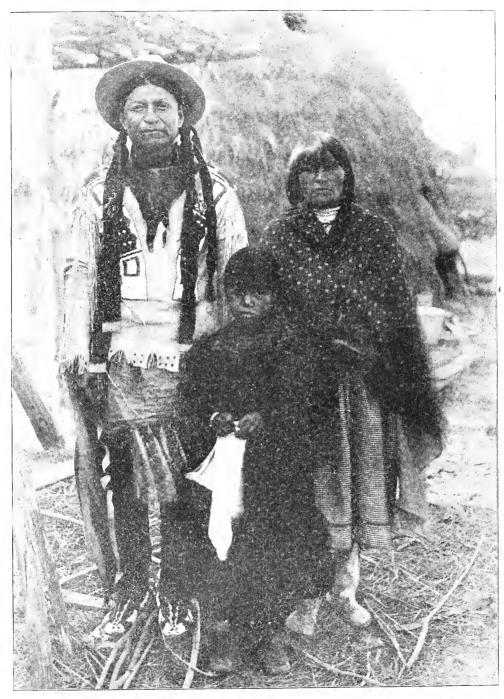
WHIRLING DERVISH IN REPOSE—This wiry-looking dervish of India whose wonderful top-like motions have made his class famous the world over, is for the moment in repose. He has wrapped his draperies about him only for a time. He will soon be spinning around in a fashion to make everybody's head whirl but his own.



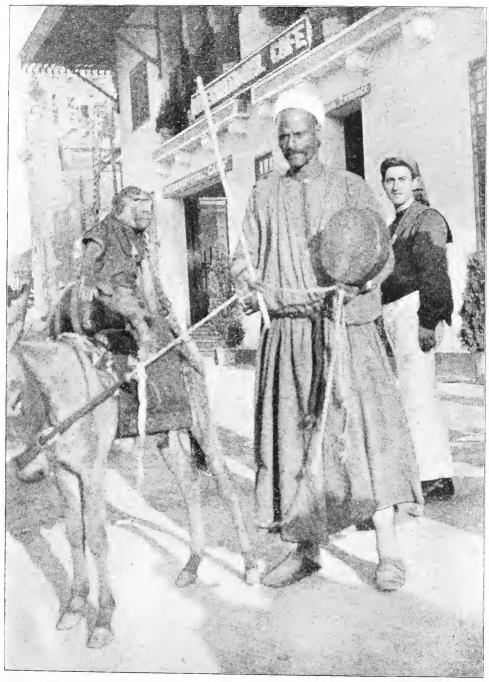
JAPANESE GOLDEN EAGLE—This magnificent specimen of Japanese art was only one of many that awakened surprise and admiration for the cleverness of the dusky islanders from the Land of the Rising Sun. Vases, urns and decorative figures in bronze and pottery, all of rare workmanship and value, also abounded.



CHOCTAW MOTHER AND CHILD—Leaping Fawn and her baby, Screaming Eagle, were favorite subjects for the camera fiends at the exposition. Dimes, quarters, and even dollars were showered upon Leaping Fawn to induce her to pose with her child because of the strength of her typical Choctaw face.



A HAPPY FAMILY—This Indian maid, her parents and the but they occupied at the Louisiana Purchase Exposition are shown, as the inmates posed for the camera. The child, Fragrant Blossom, was the recipient of much attention. She is pretty and as bright as any child of her age.



THE SIM-A-LA-LA MAN—Typical early morning scene on the Pike. The Egyptian "spieler," his pet monkey and the patient ass have gone forth before the advent of the crush to enjoy the rising sun. The avenue of all nations is deserted at this hour, save for a few stragglers.



THE AINU GIRL—There is a decided suggestion of masculinity about this feminine representative of the Ainu, an aboriginal tribe hailing from Northern Japan. She has no mustache, however, but has executed a piece of tattoo work upon her upper lip, which she doubtless considers in keeping with her not unbecoming costume.

AUTHOR'S PREFACE

T WAS with respectful and awed appreciation of the magnitude of the task that these pages were written. Standing at the foot of that giant staircase, the Cascades, the like of which no human eye ever beheld until the Louisiana Purchase Exposition was conceived, the writer first realized the ponderous immensity of the subject. It is with a spirit of deferential tribute that grateful acknowledgment is made to the master minds that conceived the exposition, affording in its execution inspiration for this work.

Greater and more important achievements that will make marvels of today appear of infinitesimal insignificance will yet receive their inspiration from this fair and generations of men unborn will reap the harvest of its potent influence upon the world. Realizing this and conscious of the fact that throughout all time nothing approaching its extent or magnificence has been produced through the energy or ingenuity of man, it is not strange that the task of recording its development and blossoming-forth is approached with reverence.

All that is or has been awaits the studious visitor, to yield to him vast stores of knowledge when subjected to his close scrutiny. Indeed someone has said that were a dire disaster to befall, bringing chaos and ruin to all the world save the Louisiana Purchase Exposition enclosure, civilization, order and current conditions could be restored from the fragments through the influence of the fair and its classified treasures. Only a few years ago it would have required a life-time and a vast fortune to encompass the globe, to see far less than now falls under observation during a half day spent at the fair. Verily this is progress—a boon to all mankind. In the great school of human experience never before has there been offered so large and finely equipped a volume, to contribute to the knowledge of nations and of men, as is this fair. Happy he whose opportunity it is to study it at close range, to see and to hear all that has been gathered for his edification. Fail-

AUTHOR'S PREFACE

ing in that, perchance this handbook may fill the gap in a measure and convey some faint conception of what has been missed.

Who shall say when man will again muster courage to expend the labor, the golden millions and the human life that such an exposition cost? Lives and fortunes were alike the forfeit that made possible the scene that is turning the eyes of all the civilized world to St. Louis. It is proper, then, and meet that this grand fair, or so much as is possible of it, shall be preserved for all time, that all who seek may acquaint themselves with its marvels. It is equally important that those who will journey to the fair may know in advance fully whereof they have heard so much and that those who cannot behold its beauties through personal visitation may at least share its delights through recourse to these pages.

It is with a view of fulfilling this triune mission that these words are indicted. If you who read these lines can be guided in fancy over the plaza, the parades, drives, lanes and lagoons that thread the exposition it is the aim to make this trip together, drinking deeply of the fountain of knowledge and partaking without stint of the good things that abound. Never before has there been such a bountiful spread so freely placed before us. It is doubtful if there will be such another within the span of our lives.

If the reader is of the same mind it will be with a spirit of trepidation, yet eagerness, that he will pursue the footsteps of

THE AUTHOR.

PUBLISHER'S PREFACE

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N PRESENTING this volume two purposes have governed its publication. It is intended to impart to the reader a thorough conception of the almost unlimited educational opportunities presented by the Louisiana Purchase Exposition, the greatest show the world has ever seen, and at the same time to divert, amuse and entertain.

No subject could afford greater opportunity to the writer than this grand assemblage of all that is useful and artistic and that makes for the advancement and betterment of mankind in general. That which cannot be conveyed to the mind by words is depicted through the art of the photographer and engraver. Serious subjects have been treated in that vein, ranging from the tortuous rise of man from early savagery to breezy descriptions of the artistic triumphs displayed in the palace devoted to varied industries. The lighter and more diverting features of the great fair are handled in a manner calculated to accord to this volume a popularity not often enjoyed by works covering as broad a field.

It has been the aim to make this of more than passing interest. Designed as a handbook of the St. Louis fair to serve as a complete guide to the prospective visitor and a substitute and solace to the less favored who are unable to make the trip, sufficient attention has been devoted to details to make it a condensed encyclopedia. Interesting facts and figures giving new views of life and conditions in various parts of Europe, Africa, Asia, the islands of the sea—yes, and in our own land, America—are arrayed beside interesting narratives of the development of the past and of our own times in the field of agriculture, horticulture, manufacturing industry, trade, commerce and the higher sciences.

Never before has such a mass of material been brought to the door of the investigator from which to abstract bright things of human

PUBLISHER'S PREFACE

interest. Fairs and expositions of other days fade away as insignificant when compared with this. It is as though the day of judgment were at hand and the people of this old globe and those who have preceded them far back into the misty realms of the past were summoned with their best works to receive awards according to the merit displayed.

All that this grey old earth has produced from the dawn of creation to the present hour is on hand to be reviewed and judged. Thus traveling with the author, the reader is led through all the various stages of development that have characterized the unfolding of the grand plan of the Creator. Wealth, beauty and achievement have given their best products for his edification and he needs but lend a willing ear to receive a message of force, power and progress, speaking out with eloquence above the noisy glamour of the fair.

If that message is accepted and from the glittering, glorious gladness of the Louisiana Purchase Exposition the readers of this volume derive a new and stronger faith in the possibilities of man, in the certainty of fruitful reward through tireless effort and a broader, more intelligent conception of the joy of living and of achieving, the presses that gave this volume birth will not have ground in vain.

THE PUBLISHER.

PREFACE

EVER before in the history of mankind has the human eye been accorded such a feast of art and beauty as is lavishly spread forth at the Louisiana Purchase Exposition, St. Louis. An unending panorama of all that appeals to the artistic and aesthetic senses; the great world's fair is destined to be a joy—alas, not forever.

In this volume an attempt has been made to depict some of the most striking scenes that greet the visitor who journeys to the exposition city on the Father of Waters. The highest art and most modern and complete appliances of the photographer have been employed to assemble the magnificent collection of pictures that grace this work. Yet may it be said in all truth, that neither the brush of the painter, the microscopic-like, all-detecting lens of the camera nor the pen of the ablest writer can convey any adequate conception of the majestic vision of beauty unfolded at this greatest of expositions.

Laughing waters dashing lightly down the myriad tiny falls that constitute the masterpiece of the fair—The Cascades. Countless lights gleaming from above, classic architecture looming up in massive piles on either side, noble figures attesting the skill of modern sculptors and the mellow strains of the greatest musical organizations America affords blend together in a tout ensemble, suggesting to the beholder a celestial vision rather than an earthly experience.

The surpassing feature of each element that enters into the marvelous creation St. Louis has given to the world, will be found reproduced within to the best of the ability of photographer and engraver. The unrivalled Cascades, whose wealth of life, action, grace and color eclipses anything mortal man has hitherto produced, are to be seen from several viewpoints. The excellence of the large engravings devoted to this piece de resistance are such that one can almost hear the dash of the purling waters in looking upon them.

Here, too, will be found reproductions of the statuary in stone,

bronze, jade and staff that has contributed so much to the tone of the great show of shows. The heroic figures that stand out against the sky line above the palace entrances, the panels, arches and shafts that abound on every hand, the finer French and Italian carvings in which the resistless beauty of the human form are impressed upon one until he marvels in awed silence at the excellence of the works of God—all these and many more of similar character, will be found transferred to these pages with the accuracy that only the camera affords.

The palaces themselves are shown in their solemn white beauty, an immaculate array of structures that carries the spectator back to the days of Greek and Roman splendor. State and foreign buildings, too, are pictured together with their most interesting and novel displays.

And now the Pike! Throbbing with life and action and bubbling over with human interest, a psychological and sociological gold mine—what pictures the Pike suggests! Fakir and faker, solemn sad visaged religionists from the orient, dancing girls from Cairo, jugglers from far Cathay, fashion mongers of Paris, sword swallowers and snake eaters, fire fighters, life savers, aborigines and cannibals—all are there. The sun dried Bedouin fresh from the parching heat of the desert and the Esquimau still clinging to his furs, are found side by side. Giant Russians and pygmy Japanese vie with each other in good natured rivalry, and the defeated Boer and victorious Briton meet with pleasant nod at the International Cafe.

All these are shown in the pursuit of their daily vocations, together with their dwellings and the most interesting features of the exhibit to which they are attached. So also is the red man of the plains and the yellow fellow who has come to us with the acquirement of the Philippines. Their wives and babies, too, find a place in these pages; something that may be said of every feature of special interest at the great exposition.

Next to a visit to the Fair itself, a careful review of the accompanying illustrations affords an educational study in the progress of the world and its development, such as is seldom afforded to the prospective visitor. It accords opportunity of cultivating familiarity with the subject calculated to make a trip to the exposition doubly delightful.

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TALL CLOUD—This grizzled old Sioux was one of the entertainers at the Louisiana Purchase Exposition and was very proud of that honor. Tall Cloud performed daily on the Pike, giving exhibitions of daring horsemanship and tricks of the plains, together with native dances.



ONLY A MEMORY—Perched on the highlands at the remote west end, this lodge was a pitiful habitation, the counterpart of hundreds that once dotted this site. It stood forth in pathetic contrast to its surroundings. In its lonely presence, well might the visitor say "Alas poor Lo!"



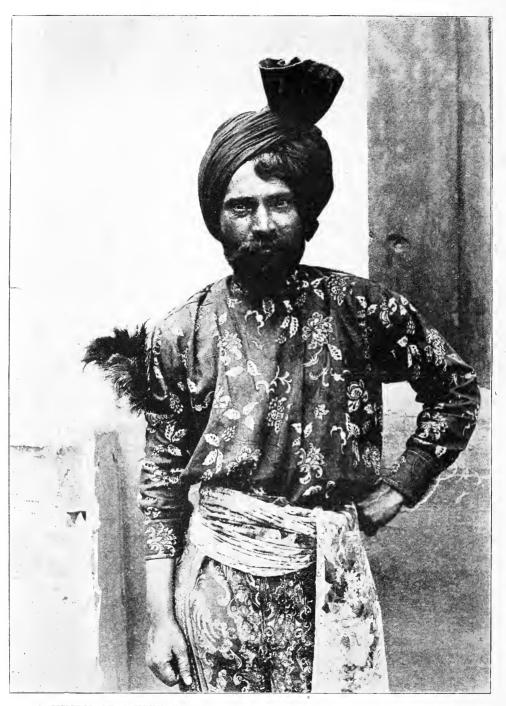
SIOUX INDIANS—This swarthy-skinned trio have the large firm mouths of their race, and the usual look of shrewd determination, which is characteristic of the Sioux. They represent a tribe which has given Uncle Sam, especially the northwestern parts of his domain, much trouble, but he treated them well at the fair, notwithstanding.



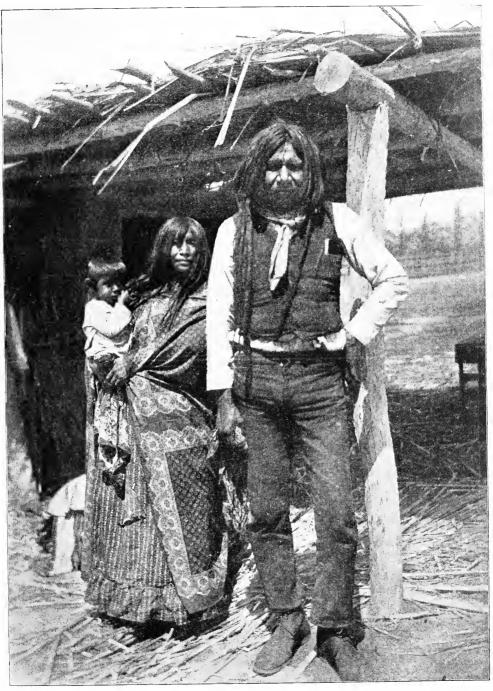
INDIAN WOMAN AT WORK—Even at the fair where he was on exhibition to the world the Indian brave looked upon work as something degrading. It followed that the squaws had to perform the labor necessary to pitch tepees and maintain some pretense of a home.



OVER THE COFFEE CUP—There seems to be an amusing conference going on over a solitary coffee cup and between these three U. S. cavalrymen in camp at the exposition. You can imagine by the way the group of horses prick up their ears that it is accompanied by some hearty laughter.



A HINDU OF MYSTERIOUS ASIA—This calm looking gentleman in the picturesque headdress, the flowered robe and broad, filmy sash, seems to have just stepped from Mysterious Asia indeed. He was one of the multitude of attractions found in the great concession known by that name at the exposition.



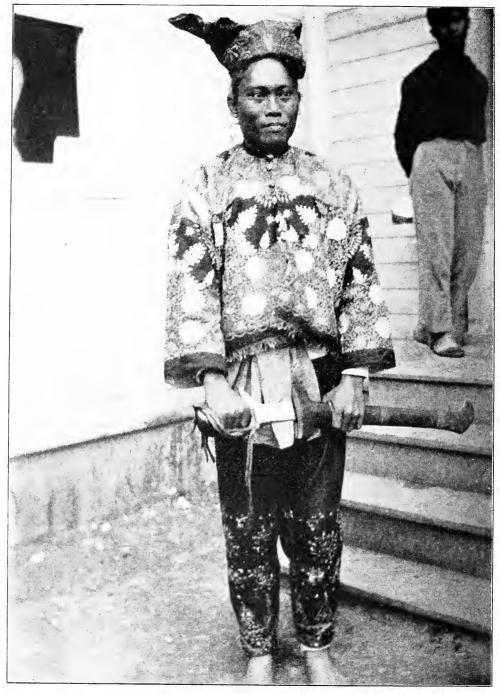
POOR LO AT HOME—Cocopa Indians in camp on the anthropological reservation at the Louisiana Purchase Exposition. The members of this family have just completed dressing their long black hair with Missouri mud. This is their favorite method of completing their toilet.



TEMPLE OF THE T. P. A.—Knights of the grip, members of the Travelers Protective Association, put up this handsome, homelike building for their comfort. It was quite unlike anything else on the grounds. The main building was 176 feet long, with 80-foot wings at either hand.



ALL IS VANITY—This Igorrote maid, although unlettered and unfamiliar with the vanities of her white sister, is not dead to the necessity of personal adornment. Accordingly, she has thrust through her pierced ears strips of wood, in lieu of earrings.



MORO CHIEF IN FULL DRESS—This leader among our newly made subjects was photographed standing near the barracks built by the government for the Philippine constabulary at St. Louis. He is shown with his deadly crease sheathed, standing at "attention."



INDIAN MEDICINE MAN—Among the rank and file of the Red Men the Medicine Man is often a bigger man than a chief. Through his charms and incantations, which he showed exposition visitors with many weird mannerisms, he is believed to perform most wonderful cures of body and mind. He is often a mystery even to the white man.



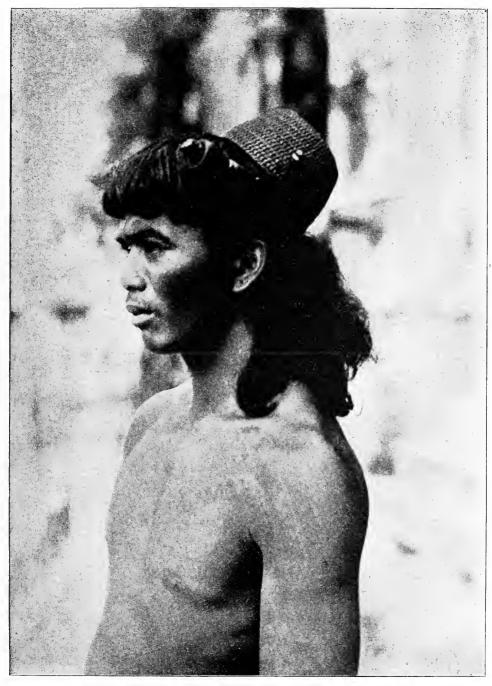
READY FOR THE FRAY—This proud Igorrote warrior has consented to pose, armed cap-a-pie; that is, as nearly from head to foot as he ever will be. He is known at home as Tuckyam, and, with his imposing spear and strongly-bound wooden shield, is a character of considerable consequence.



STAFF SCULPTURE AT THE FAIR—These four beautiful figures are excellent examples of the staff artists' work. They were photographed in lonely solitude against the exposition fence, awaiting removal to the Fisheries exhibit, where they formed an important part of the decorative scheme.



CITY WITHOUT NAILS—With carloads of imported material the Filipinos at the fair built for themselves a veritable city. Throughout not a nail was employed, in most instances rattan, bejuca brush rope and nipa grass being used to lash the bamboo parts together.



AN IGORROTE CHIEF AT THE EXPOSITION—This is the striking head and bust of a young Igorrote chief, the warlike representative of a Filipino tribe who have been pronounced of such violent temper that it is impossible to peacefully assimilate them. They are the noted dog-eaters of the fair and are said to be head-hunters.



LEAPING PANTHER—Even with his bristling headdress Leaping Panther has a mild aspect that belies his ferocious name. He was at the Indian Congress of the world's fair as a representative Commanche. At the close of the exposition he returned to his western home, duly impressed with the white man's greatness.

CHAPTER I.

EVENT COMMEMORATED BY THE GREAT FAIR

States and Territories Affected—Series of Kaleidoscopic Changes—Where the Purchase Was Ratified—Influences Governing Napoleon's Action—Talleyrand's Official Explanation—French Ambassador's Review—President Roosevelt's Estimate—Dream of National Expansion Realized—An Unprecedented Condition—Compared With Ancient Expansion—An Experiment in Government—Nation's Destruction Prophesied—Carving the Wilderness—World Accepts Our Process—An Epitome of Our History.

O EVENT in the history of our country, barring the Declaration of Independence, the adoption of the constitution and the Civil War, has been so fraught with importance and significance as that which this international exposition of 1904 commemorates. In a word it was the annexation of the West and the circumstance that placed the Pacific Coast within our grasp.

The conclusion of the treaty of April 30, 1803, by Napoleon Bonaparte, then First Consul of the French Republic, and Thomas Jefferson, author of the Declaration of Independence, and third President of the United States, put an end forever to dangerous friction which had been a source of unceasing anxiety to the administrations of Presidents Washington and John Adams. It also eliminated forever an impending resumption of the strife, continued for more than a century, between France and Great Britain for ascendancy in North America.

STATES AND TERRITORIES AFFECTED.

Directly the stroke of the pen that closed the transaction, gave to us all that territory now included in Louisiana, Arkansas, Indian Territory, Oklahoma, Missouri, Kansas, Nebraska, Iowa, North and South Dakota and Montana as well as part of Minnesota, Wyoming and Colorado. Indirectly, Washington, Oregon, Idaho, California, Nevada, Utah, Arizona, New Mexico and Texas are the fruits of the statesmanship that characterized the transaction. Our national expansion and evolution as a world power date from that hour.

Prior to that time three great European powers were competitors in

colonizing and parceling out American territory—the Spanish, French and English. The former touched first the West Indies, then the Floridas, and the daring De Soto discovered Louisiana and the rolling Mississippi, that was his grave. All three powers—dangerous elements for such close neighbors—ceased to constitute an ever present source of jeopardy with the signing of the Louisiana purchase papers.

SERIES OF KALEIDOSCOPIC CHANGES.

Historically, Louisiana takes rank in this recital. It is her name that graced the entire region purchased from France, her forests were penetrated by De Soto on his memorable march from the Floridas in search of the wealth of treasure that was the quest of Spaniards for two score years after they had conquered Peru; it was into the waters of the gulf that wash her shores that La Salle sailed with his fleet from France; it was in New Orleans that occurred the first uprising against an Old World power and it was in her Cabildo that the formal treaty of transfer by Napoleon was ratified.

This Cabildo, over which within a fortnight floated three flags—first, the standard of Spain, then the tri-color of France, and last, to remain forever, the stars and stripes—has been reproduced, at the fair, as it was in 1803, and in front of the building is a reproduction of Jackson Square, which the structure still faces in New Orleans.

WHERE THE PURCHASE WAS RATIFIED.

It was in the supreme court room of the Cabildo—now used as a city court—that the famous transfer was ratified and today, in the replica of this room, is a facsimile of the treaty itself, bearing the signatures of Marbois, Livingston and Monroe, while on the walls are portraits of the men who placed their names to the instrument and, bearing them company, pictures of Jefferson, Napoleon, Salcedo, Lausat, Wilkinson and Claiborne. So faithfully is everything reproduced that in the courtvard one is confronted with an original stone filter and the drinking "monkeys," which were used in those days, and in the prison cells are the old Spanish instruments of torture—the garotte, with which criminals were choked to death, and the stocks in which those guilty of misdemeanors were held captive.

The furniture in this historic building is the same as it was in 1803, and visitors can see the desk at which the instrument of transfer was signed and the chairs occupied by the persons whose names are so intimately associated with this great peace conquest of land from which fourteen states and territories have been carved.

INFLUENCES GOVERNING NAPOLEON'S ACTION.

After gaining Louisiana from Spain through the secret treaty of San Ildefonso, October 1, 1800, Napoleon was suddenly confronted with conditions that modified his American policy. The horrors experienced by his army in San Domingo, culminating in the death of 30,000 soldiers from yellow fever, coupled with pending war at home and a pressing need for funds for muskets to carry on his mighty game of conquest, influenced him to no small extent. He could give British aggression no greater setback than to turn over the "howling wilderness" to the new republic, whereas otherwise it would fall into England's grasp. And that was what he did. The step once taken, Napoleon was held to the United States through the tie of mutual hatred and distrust of England.

TALLEYRAND'S OFFICIAL EXPLANATION.

Prince De Talleyrand, minister of foreign affairs of France at that time, whose imperial dream of colonial expansion was shattered by the transfer, which he bitterly opposed, explained the transaction in an official document in these words:

"The wish to spare the North American continent the war with which it was threatened, to dispose of different points of dispute between France and the United States of America, and to remove all the new causes of misunderstanding which competition and neighborhood might have produced between them; the position of the French colonies; their want of men, cultivation, and assistance, in fine, the empire of circumstances, foresight of the future, and the intention to compensate by an advantageous arrangement for the inevitable loss of a country which was going to be put at the mercy of another nation—all these motives have determined the Government to pass to the United States the rights it had acquired from Spain over the sovereignty and property of Louisiana."

FRENCH AMBASSADOR'S REVIEW.

In reviewing the transaction one hundred years later, at the dedication of the Louisiana Purchase Exposition, April 30, 1903, the French Ambassador, M. Jean J. Jusserand, declared:

"The treaty signed one hundred years and a day ago had little precedent in history; it dealt with territories larger than the empire of Alexander; it followed no war; it was preceded by no shedding of human blood; the new possessors got a hundred times more than they ever thought of demanding, and the negotiations were so simple, the good faith and mutual friendship so obvious, that all was concluded in a fortnight. The simplest protocol on postal or sanitary questions takes nowadays more time. Each party found its interest in the transaction, but something more than interest led the affair to a speedy conclusion, and that was the deep-rooted sympathy of the French and American nations.

"The French were simply continuing what they had begun; they had wished America to be free, and they were glad to think that she would be great. Money was paid, it is true; had this been the main consideration, Louisiana would have been preserved, for the money was not by far the equivalent of the buildings and lands belonging to the State. Part of the money was employed in satisfying American claims. 'Those,' says the French negotiator, Marbois, 'who knew the importance of a good understanding between these two countries, attached more importance to the \$4,000,000 set apart for the American claims than to the \$12,000,000 offered to France.'"

PRESIDENT ROOSEVELT'S ESTIMATE.

Perhaps no more valuable estimate of the event commemorated by this magnificent exposition can be cited than that given by the President of the United States, Theodore Roosevelt, a close student of the subject and author of four volumes on "The Winning of the West." Addressing himself to official representatives of all nations and to the multitude assembled to participate in the dedicatory exercises, he said:

"At the outset of my address let me recall to the minds of my hearers that the soil upon which we stand, before it was ours, was successively the possession of two mighty empires—Spain and France—whose sons made a deathless record of heroism in the early annals of the New World.

"No history of the western country can be written without paying heed to the wonderful part played therein in the early days by the soldiers, missionaries, explorers and traders, who did their work for the honor of the proud banners of France and Castile.

"While the settlers of English-speaking stock, and those of Dutch, German and Scandinavian origin who were associated with them, were still clinging close to the Eastern seaboard, the pioneers of Spain and of France had penetrated deep into the hitherto unknown wilderness of the West and had wandered far and wide within the boundaries of what is now our mighty country. The very cities themselves—St. Louis, New Orleans, Santa Fe, New Mexico—bear witness by their titles to the nationalities of their founders. It was not until the Revolution had begun that the English-speaking settlers pushed west across the Alleghanies and not until a century ago that they entered in to possess the land upon which we now stand.

"We have met here today to commemorate the hundredth anniversary of the event which more than any other, after the foundation of the Government, and always excepting its preservation, determined the character of our national life—determined that we should be a great expanding nation instead of relatively a small and stationary one.

DREAM OF NATIONAL EXPANSION REALIZED.

"Of course, it was not with the Louisiana Purchase that our career of expansion began. In the middle of the Revolutionary War the Illinois region, including the present States of Illinois and Indiana, was added to our domain by force of arms, as a sequel to the adventurous expedition of George Rogers Clark and his frontier riflemen.

"Later the treaties of Jay and Pinckney materially extended our real boundaries to the west. But none of these events was of so striking a character as to fix the popular imagination. The old thirteen colonies had always claimed that their rights stretched westward to the Mississippi, and, vague and unreal though these claims were until made good by conquest, settlement and diplomacy, they still served to give the impression that the earliest westward movements of our people were little more than the filling in of already existing national boundaries.

"But there could be no illusion about the acquisition of the vast territory beyond the Mississippi, stretching westward to the Pacific, which in that day was known as Louisiana. This immense region was admittedly the territory of a foreign power, of a European kingdom. None of our people had ever laid claim to a foot of it. Its acquisition could in no sense be treated as rounding out any existing claims. When we acquired it we made evident once for all that, consciously and of set purpose, we had embarked on a career of expansion; that we had taken our place among those daring and hardy nations who risk much with the

hope and desire of winning high position among the great powers of the earth. As is so often the case in nature, the law of development of a living organism showed itself in its actual workings to be wiser than the wisdom of the wisest.

AN UNPRECEDENTED CONDITION.

"Never before had the world seen the kind of national expansion which gave our people all that part of the American continent lying west of the thirteen original States, the greatest landmark in which was the Louisiana Purchase. Our triumph in this process of expansion was indissolubly bound up with the success of our peculiar kind of federal government; and this success has been so complete that because of its very completeness we now sometimes fail to appreciate not only the all-importance but the tremendous difficulty of the problem with which our nation was originally faced.

"When our forefathers joined to call into being this nation, they undertook a task for which there was but little encouraging precedent. The development of civilization from the earliest period seemed to show the truth of two propositions: In the first place, it had always proved exceedingly difficult to secure both freedom and strength in any government; and in the second place, it had always proved well-nigh impossible for a nation to expand without either breaking up or becoming a centralized tyranny. With the success of our effort to combine a strong and efficient national union, able to put down disorder at home and to maintain our honor and interest abroad, I have not now to deal. This success was signal and all-important, but it was by no means unprecedented in the same sense that our type of expansion was unprecedented.

COMPARED WITH ANCIENT EXPANSION.

"The history of Rome and of Greece illustrates very well the two types of expansion which had taken place in ancient time, and which had been universally accepted as the only possible types up to the period when, as a nation, we ourselves began to take possession of this continent. The Grecian states performed remarkable feats of colonization, but each colony as soon as created became entirely independent of the mother state, and in after years was almost as apt to prove its enemy as its friend. Local self-government, local independence, was secured, but only by the absolute sacrifice of anything resembling national unity.

"In consequence, the Greek world, for all its wonderful brilliancy and the extraordinary artistic, literary and philosophical development which has made all mankind its debtors for the ages, was yet wholly unable to withstand a formidable foreign foe, save spasmodically. As soon as powerful, permanent empires arose on its outskirts, the Greek states in the neighborhood of such empires fell under their sway. National power and greatness were completely sacrificed to local liberty.

"With Rome the exact opposite occurred. The imperial city rose to absolute dominion over all the people of Italy and then expanded her rule over the entire civilized world by a process which kept the nation strong and united but gave no room whatever for local liberty and self-government. All other cities and countries were subject to Rome. In consequence this great and masterful race of warriors, rulers, road builders and administrators, stamped their indelible impress upon all the after life of our race, and yet let an over-centralization eat out the vitals of their empire until it became an empty shell, so that when the barbarians came they destroyed only what had already become worthless to the world.

AN EXPERIMENT IN GOVERNMENT.

"The underlying viciousness of each type of expansion was plain enough and the remedy now seems simple enough. But when the fathers of the Republic first formulated the Constitution under which we live this remedy was untried and no one could foretell how it would work. They themselves began the experiment almost immediately by adding new states to the original thirteen. Excellent people in the East viewed this initial expansion of the country with great alarm. Exactly as during the colonial period many good people in the mother country thought it highly important that settlers should be kept out of the Ohio Valley in the interest of the fur companies, so after we had become a nation many good people on the Atlantic coast felt grave apprehension lest they might somehow be hurt by the westward growth of the nation.

NATION'S DESTRUCTION PROPHESIED.

"These good people shook their heads over the formation of states in the fertile Ohio Valley, which now forms part of the heart of our nation; and they declared that the destruction of the Republic had been accomplished when through the Louisiana Purchase we acquired nearly half of what is now that same Republic's present territory. Nor was their feeling unnatural. Only the adventurous and the far-seeing can be expected heartily to welcome the process of expansion, for the nation that expands is a nation which is entering upon a great career, and with greatness there must of necessity come perils which daunt all save the most stout-hearted.

CARVING THE WILDERNESS.

"We expanded by carving the wilderness into territories and out of these territories building new states when once they had received as permanent settlers a sufficient number of our own people. Being a practical nation, we have never tried to force on any section of our new territory an unsuitable form of government merely because it was suitable for another section under different conditions. Of the territory covered by the Louisiana Purchase a portion was given statehood within a few years. Another portion has not been admitted to statehood, although a century has elapsed—although doubtless it soon will be. In each case we showed the practical governmental genius of our race by devising methods suitable to meet the actual existing needs; not by insisting upon the application of some abstract shibboleth to all our new possessions alike, no matter how incongruous this application might sometimes be.

"Over by far the major part of the territory, however, our people spread in such numbers during the course of the nineteenth century that we were able to build up state after state, each with exactly the same complete local independence in all matters affecting purely its own domestic interests as in any of the original thirteen states, each owing the same absolute fealty to the Union of all the states which each of the original thirteen states also owes—and finally each having the same proportional right to its share in shaping and directing the common policy of the Union which is possessed by any other state, whether of the original thirteen or not.

WORLD ACCEPTS OUR PROCESS.

"This process now seems to us part of the natural order of things, but it was wholly unknown until our own people devised it. It seems to us a mere matter of course, a matter of elementary right and justice, that in the deliberations of the national representative bodies the representatives of a state which came into the Union but yesterday stand on a footing of exact and entire equality with those of the commonwealths whose sons once signed the Declaration of Independence,

"But this way of looking at the matter is purely modern, and in its origin purely American. When Washington, during his presidency, saw new states come into the Union on a footing of complete equality with the old, every European nation which had colonies still administered them as dependencies, and every other mother country treated the colonist not as a self-governing equal, but as a subject.

"The process which we began has since been followed by all the great peoples who were capable both of expansion and of self-government, and now the world accepts it as the natural process, as the rule; but a century and a quarter ago it was not merely exceptional—it was unknown.

"This, then, is the great historic significance of the movement of continental expansion in which the Louisiana Purchase was the most striking single achievement. It stands out in marked relief even among the feats of a nation of pioneers, a nation whose people have from the beginning been picked out by a process of natural selection from among the most enterprising individuals of the nations of Western Europe.

AN EPITOME OF OUR HISTORY.

"The acquisition of the territory is a credit to the broad and farsighted statesmanship of the great statesmen to whom it was immediately due, and above all to the aggressive and masterful character of the hardy pioneer folk to whose restless energy these statesmen gave expression and direction, whom they followed rather than led. The history of the land comprised within the limits of the Purchase is an epitome of the entire history of our people. Within these limits we have gradually built up state after state, until now they many times over surpass in wealth, in population and in many-sided development the original thirteen states as they were when their delegates met in the continental congress."

WHY THE EXPOSITION WAS INTERNATIONAL.

Thus, in whatever way the event known in history as the Louisiana Purchase, is viewed, it is now a matter of congratulation both to the people of the United States and the world at large. It elevated the United States from the position of an inferior, struggling power, beset by aliens on every side, to that of a vast, consolidated commonwealth stretching from ocean to ocean. It presented to her people a problem of material development whose solution promised to be the work of cen-

turies; but the work progressed with such giant strides that, ere one century had elapsed the addition of the Louisiana Purchase to the domain of the United States proved to be the event which gave her the magnificent outlook of a world-power. From the moment she could, from her own shores, look over the broad expanse of the Pacific that was her manifest destiny.

The pioneer explorers, Lewis and Clark, Pike, Long and Fremont, first laid bare the vast possibilities of the Louisiana Purchase. Its magnificent rivers, its lofty mountains, and its superb picturesqueness, which has done so much to develop a national pride and patriotism, were first brought into the life of the people by these intrepid men. They also hinted at the immeasurable wealth of field and mine. Then came the long emigrant trains, the railroads and the swarms of hardy settlers—the new, broad civilization which was created west of the Mississippi River.

It was a resistless tide of rich, rushing blood which made the United States what it is and which is thus fitly commemorated by the greatest of expositions. Had the Louisiana Purchase never been, the St. Louis exposition would never have been international in its scope and meaning. But the Louisiana Purchase, as developed within the past century, has added the energy, the bravery, the tireless and practical intellect and the boundless natural wealth of the West, to the capital, the organized industries and the general maturity of the East, thereby laying the foundation of a progressive greatness which is already of world-wide recognition; and the Louisiana Purchase Exposition fully rose to the height and breadth of these splendid results.

CHAPTER II.

PREVIOUS INTERNATIONAL EXPOSITIONS

World's Columbian Exposition Reviewed—Municipalities Struggle for Honor—Woman's Building a Feature—Buffalo's World's Fair—Opening the Crystal Palace—France Enters the Lists—Vienna and the Centennial—The Paris Exposition of 1889—Eiffel Tower Based on American Idea—Closes in Brilliant Triumph.

S HAKSPERE said that comparisons are "odorous" or, according to popular version, odious; yet, all things have relative value and so it is necessary that there should be some basis of comparison in fixing the greatness of the Louisiana Purchase Exposition in our minds. Nothing the world has ever seen before so nearly approaches the magnificence and vastness of this grand fair as the international exposition given at Chicago ten years ago, in commemoration of Columbus' services to the world. Therefore the St. Louis effort will be judged generally by the standard established by Chicago.

WORLD'S COLUMBIAN EXPOSITION REVIEWED.

The great Chicago fair is too fresh in the public mind to require any vast amount of space in this volume. Its beauty earned for it the euphonious titles "white city" and "dream city." Its general plan and the style of architecture that characterized its buildings left an imprint on all subsequent expositions and find an echo in the Louisiana Purchase Exposition today. Its organization and management were similar to that governing the St. Louis show. It opened May 1 and closed Oct. 31, 1893, drawing a large attendance and proving a success in every sense of the word. During the early months of the fair the attendance was not encouraging, but after August pilgrims flocked in a constant stream from all parts of the world.

Paid admissions during the entire period numbered 21,479,661 and the passes 6,052,188. On Chicago day, Oct. 9, 716,881 persons passed through the turnstiles—the largest assemblage of authentic record which has greeted any civic occasion.

Without taking into consideration the amount expended by private exhibitors, \$37,000,000 was appropriated for the fair—\$25,000,000 by the management, \$6,000,000 by foreign governments and an equal amount by the various states. Two hundred acres of what is now Jackson park were occupied by the buildings, which numbered 400. These, like the structures at St. Louis, were great frames covered with white staff, a product of plaster of Paris.

MUNICIPALITIES STRUGGLE FOR HONOR.

Its preliminary history is a record of a battle of municipal forces and interests such as no other chapter of the civic annals of our country can relate. Four great cities—New York, St. Louis, Washington and Chicago—were bitter competitors for the honor. On the eighth ballot taken by Congress Chicago received 157 votes, New York 107, St. Louis 25 and Washington 18.

Of the hundreds of structures at Chicago the Administration Building, in which were located the offices of the exhibition, was considered the most beautiful. It was surmounted by a magnificent gilded dome 120 feet in diameter and 210 feet in height. The whole area covered was

260 feet square.

One of the most pronounced wonders of the Chicago exposition was the Fisheries Building, the like of which had never before been seen. It was 1,100 feet long and 200 feet wide. The general Fisheries exhibit was in the central portion. At each end was an immense wing. One of these contained the extensive Angling exhibit, while the other was the Aquarium. The latter was a great tank, with glass fronts, 575 feet in length, holding 140,000 gallons of water, wherein innumerable varieties of fishes were to be seen.

WOMAN'S BUILDING A FEATURE.

A remarkable circumstance is found in the fact that the Woman's Building, reserved for the display of feminine work and progress, was designed by a woman—a graduate of the Architectural School of Technology in Boston—Miss Sophia G. Hayden. The prize Miss Hayden received for the design and its execution was \$1,000. It was given a beautiful site in the northwestern part of the park, near Horticultural Hall and the Illinois State Building, not far from the picturesque Wooded Island. Like all of the larger buildings it faced a lagoon—an idea car-

ried out in grouping the more important buildings at the Louisiana Purchase Exposition.

Forty countries were represented as exhibitors. Many of these had buildings, as did various states. The United States government had a fine separate building. The possibilities of such structures from the standpoint of permanence is found in the fact that several are still standing—the German building, for instance, the art gallery where the great Field Columbian Museum is now housed, and La Rabida convent. And, by the way, the three caravels, duplicates of those in which Columbus plowed the seas on his eventful voyage of discovery, which were sent from Spain as an exhibit, remained ten years in an excellent state of preservation in the park lagoons after almost every vestige of the fair had disappeared.

CHICAGO'S PRINCIPAL BUILDINGS.

The great buildings and those attracting most attention aside from those previously mentioned were the Manufacturers, Machinery, Agriculture, Horticulture, Mines, Transportation, Electricity, Fine Arts and Liberal Arts.

The cold storage building will be recalled principally as the scene of a fire horror early in the history of the fair. It is a peculiar circumstance that the same fate—destruction by fire, although happily without similar loss of life—befell most of the buildings at the close of the Columbian Exposition. This has always been regarded as having been a plan to get rid of the expense of wrecking them.

Three features of the World's Columbian Exposition require special mention before passing from the subject—the World's Congress of Religions held there, the never-to-be forgotten Midway Plaisance, and that artistic triumph, the Court of Honor. The latter is equalled, yes, discounted, at the Louisiana Purchase Exposition, in the combined features of the Plaza of St. Louis, the Grand Basin, Cascades and the Plaza of States. So, too, the Pike is the grander successor of the Midway.

BUFFALO'S WORLD'S FAIR.

It is not necessary to dwell at length upon other American fairs since that time. Of these the Pan-American Exposition at Buffalo was the most conspicuous. Buffalo proved her claim to the title of "The Electric City." It was fitting that electricity should have been the dominant feature, for the Cataract of Niagara is within a few miles and the count-

less millions of horse-power of that great waterfall was harnessed to produce the energy which moved the wheels and illuminated the buildings within the fair inclosure.

The piece de resistance of that exposition was the Electric Tower, looming 375 feet above the earth. Its main body was 80 feet square and 200 feet high. The crown was in three parts, of diminishing proportions. The first of these was an arcaded loggia, with pavilionettes adorning each of the four corners. Above the loggia was a high, circular colonnade entirely open. A spiral stairway in the center led up to a domed cupola, on which was poised a figure of the Goddess of Light, overlooking and dominating the entire exposition. Upon this tower and the buildings and courts were electrical illuminations on a scale never before attempted. Elevators were run to a restaurant, roof garden, reception-room, etc., on the various floors of the huge structure.

Because of the somewhat local character of the fairs held at San Francisco, Omaha, Atlanta, Charleston and other American cities of late years, only passing mention of them is necessary.

EARLY HISTORY OF INTERNATIONAL EXPOSITIONS.

It seems almost incredible in reviewing the history of similar expositions that the first effort in that direction on a large scale was instituted only a half century ago. In the decades that have passed, the art of exhibiting has developed into a science so exact as to make possible the dream of beauty St. Louis has presented to the world.

To England may be attributed the honor of having brought together all the nations to display the progress they had attained in the race of artistic and industrial rivalry. Despite that fact, the earliest suggestion and birthplace of all such competitive exhibitions was in France.

Discussion of early fairs of international scope naturally centers about the Crystal Palace. Its management has had a peculiar and significant bearing on all subsequent exhibitions of correlative scope. To start with, competition governed the selection of the building plans. Only thirty days were allowed for the presentation of such plans, yet two hundred and thirty-three competitors appeared. While the majority were from London and the immediate vicinity, fully one-sixth were foreigners.

Through a happy thought the building was made 1851 feet long, the numerals corresponding with the year in which the exposition was held.

The breadth was 450 feet. One million dollars was expended on the building, which required about twenty acres of glass, two hundred and five miles of sash bar, thirty-four miles of gutter pipe and other materials on a correspondingly large scale.

OPENING THE CRYSTAL PALACE.

On May 1, 1851, Queen Victoria opened the doors and the principal dignitaries of the land participated in the formalities of the occasion.

Excellent management and the unlimited enthusiasm the exposition evoked were responsible for the remarkable fact that nearly \$1,000,000 surplus remained after all expenses had been paid. Never since have such returns been obtained in proportion to the source of revenue. The concessions were limited, no liquors being sold on the grounds and the refreshment concession going for \$27,500, a figure that would cause merriment today if offered for such a privilege. It may be a sad commentary, but it is nevertheless true, that in these later days the liquor privileges have been considered among the most productive sources of revenue to such enterprises.

What the refreshment concessions are worth at a modern fair may be judged from the fact that \$375,000 would not cover the business done in supplying food at this first great international exposition. There was excellent judgment shown in the matter of regulating the price of admission in that early day. On all days except Friday and Saturday the admission was fixed at one shilling (25c in our money). On Friday of each week, two shillings six pence, or 75c, was charged and on Saturday, five shillings, or \$1.25.

DETAILS OF THE FIRST BIG SHOW.

This scale of prices was adopted in order that all classes might enjoy the fair to the fullest extent. Through this system people of moderate circumstances were enabled to enjoy the fair during the early portion of the week, while those who sought to be more exclusive were afforded opportunity to enjoy the fair amid more particular surroundings on the high priced days. Nearly \$2,000,000 was taken in at the gates and the city of London increased its revenue about \$20,000,000 during the six months.

The United States had comparatively few exhibitors, yet secured a larger number of awards, preportionately, than any other foreign com-

petitor. It is a notable fact that the exhibition of Powers' sculpture "The Greek Slave," did more than any other circumstance to break down the European idea that Americans were a race of shopkeepers without artistic possibilities. The awards conferred at this exposition numbered 5,248.

Dublin followed in 1853 with an exposition claiming international scope, initiated and conducted by private capital, but it was comparatively local in its scope. Its most striking feature was the most magnificent group of paintings ever assembled up to that time. Cork, too, conducted an exposition in the same year, Munich in the following year and Manchester in 1857.

NEW YORK'S DISASTROUS EFFORT IN 1853.

The New York World's Fair in 1853 was the immediate successor to the Crystal Palace, where it found its inspiration. It was handicapped from the start by the absence of government support. Strangely enough, hostility developed on every side, the contention being raised that competitors, both at home and abroad, would receive undue advantage through the exposition.

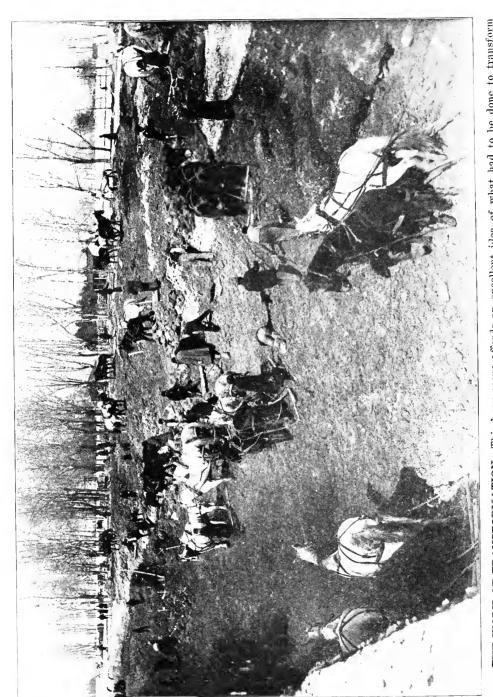
The fair was held at 42nd Street and 6th Avenue, the capital stock of the exposition company being \$200,000. When the fair was opened, July 14, 1853, President Pierce, members of his cabinet, Governor Horatio Seymour, of New York, and a number of government diplomats and distinguished personages officiated in its formalities. As with the London fair, only four classes of exhibits were considered: Raw materials, manufacturers, machinery and fine arts. Of the 4,100 exhibitors, less than one-half were American. The deficit, borne by the stockholders at its close, amounted to \$300,000.

FRANCE ENTERS THE LISTS.

Emperor Louis Napoleon, of France, made the Paris Exposition of 1855 the artistic success it proved and added to the purely commercial aspects of such fairs the artistic imprint its successors bear to this day. The Palace of Industry of that fair remains today a feature of the Champs Elysees. Of 24,000 exhibitors only 144 were Americans. The exposition was a financial loss, although the city of Paris gained \$10,000,000 in trade during the season. The attendance was 5,162,330 and the admission ranged from eight cents on Sunday to \$1.00 on Friday. The ordinary general admission was one franc, about 20 cents.



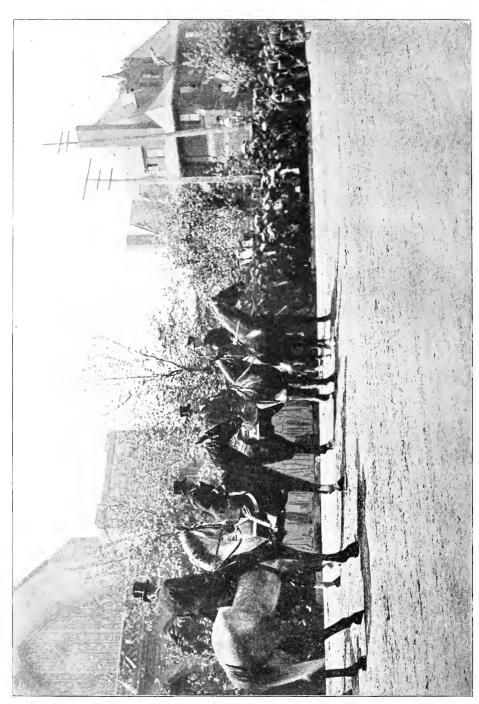
PRESIDENT ROOSEVELT AT THE FAIR—President of the United States greeting President Francis and other exposition officials. The chief executive expressed himself as surprised and delighted with the extent of the grand show prepared to demonstrate the world's progress in industry, art, science and the pursuits of peace and war. President Roosevelt was everywhere received with the marked enthusiasm characteristic of the hour.



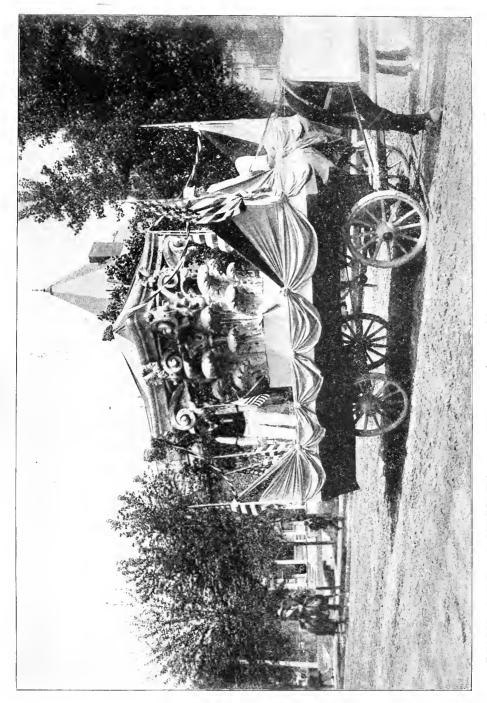
THE WORK OF TRANSFORMATION—This busy scene affords an excellent idea of what had to be done to transform the natural park into the dream of beauty it proved when the fair opened. The energy of thousands of men and horses and of almost innumerable engines was necessary to perform the task.



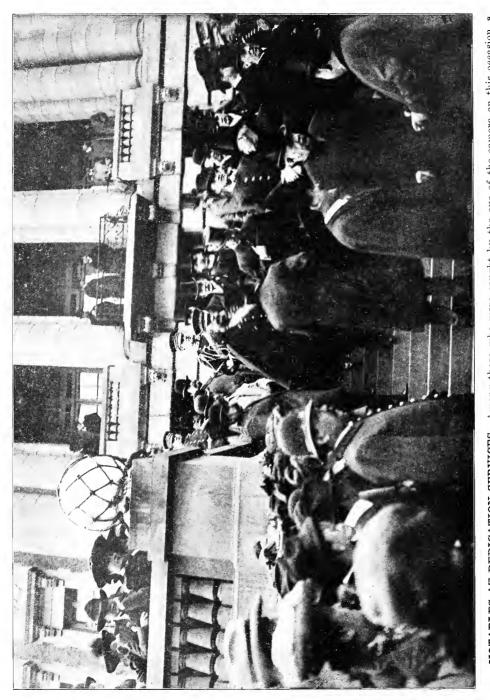
LAYING CORNER STONE OF MANUFACTURES BUILDING—This scene, depicting the solenn exercises with which the corner stone of the Palace of Manufactures was laid, was oft repeated while the fair was passing through its early stages. On every side similar formalities marked the transition of a park into a great area of huge white exposition structures.



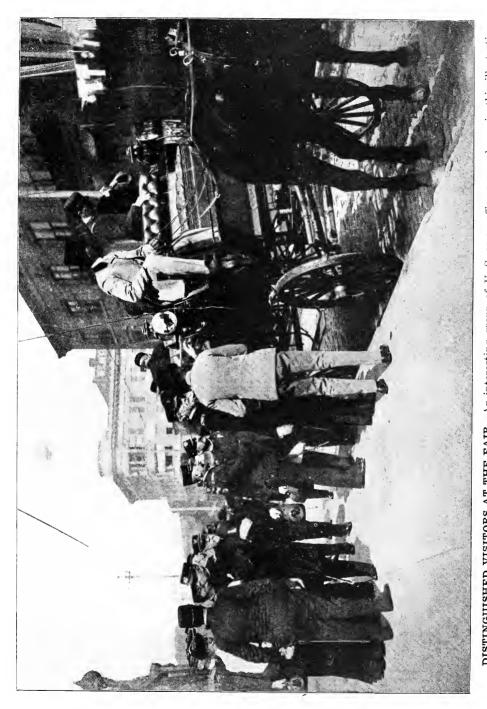
PRESIDENT FRANCIS AND STAFF—Parades were of almost daily occurrence in St. Louis during the early period of the fair's history. Multitudes turned out to witness these gala affairs with their tramping hosts and smartly caparisoned steeds. Such a scene is here depicted with President Francis of the Exposition Company and his staff in the foreground, awaiting the arrival of the procession to be reviewed.



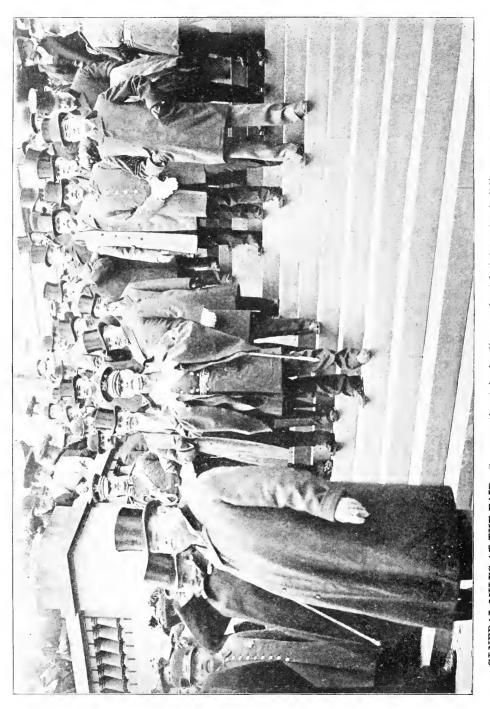
READY TO CAP A COLUMN—This cap, now surmounting a noble column in the portice of the Palace of Varied Industries, is shown as it appeared on the occasion of the great dedication day parade. The float in which it figured was enthusiastically received by the crowds along the line of march, as an advance agent of the great fair itself.



NOTABLES AT DEDICATION SERVICES—Among those who were caught by the eye of the camera on this occasion, a year before the opening date, were the late Mark Hanna, Former President Grover (Teveland and General Nelson A. Miles. The moving throng includes a number of persons distinguished in civic, military, political and diplomatic life who came from all parts of the world to participate in the festivities.



DISTINGUISHED VISITORS AT THE FAIR—An interesting group of U. S. army officers are shown in this illustration hurrying to attend one of the numerous functions that characterized the unfolding of the great exposition. At variors times nearly all the best known men of the army, not assigned to foreign service, enjoyed the rare sights at St. Louis.



GENERAL MILES AT THE FAIR—Scene on the stairs leading to the Administration building, as General Miles and other distinguished visitors were preparing to depart at the conclusion of the dedication erremonies. The soldier is shown well in the foreground, in full uniform. Close by are members of the diplomatic corps, sent as representatives of their respective governments.

A second great universal exposition was held in London in 1862. Because of the Civil War this country took little interest and little part in it. Success crowned the fair, however, and it closed without a deficit with a daily average attendance of 36,500. Paris then came to the front with a second fair to advertise itself as the handsomest city on the globe. The site was the historic Champs de Mars. It was opened by Napoleon and Eugenie, April 1, 1867, and continued until Nov. 3. The expenses exceeded the receipts, yet it brought years of prosperity to Paris.

VIENNA AND THE CENTENNIAL.

Vienna's international exposition was held in 1873 at a cost of \$7,800,000 and with 664 American exhibitors who carried off 442 awards.

The Centennial exposition, held at Fairmount Park, Philadelphia, in 1876, is yet fresh in the minds of many of our people. It was in many respects the greatest fair up to that time and did much to place the United States and its interests in a proper light before Europe. Congress created a centennial board, stock was sold at \$10 a share, a loan of \$1,500,000 was made and later repaid, \$3,000,000 was contributed by Pennnylvania and Philadelphia, and other states contributed liberally. The fair was open from May 10 to Nov. 10 and was visited by nearly ten million persons. Of the foreign nations Spain had the most numerous exhibits, 3,822. It was a grand success, with magnificent after results at a time of gloomy depression. Many hold the fair to have been the turning point of the financial crisis.

France held another fair in Paris in 1878 and two were held in Australia in the two succeeding years.

THE PARIS EXPOSITION OF '89.

The greatest effort ever made in that direction up to that time characterized the Paris exposition of 1889, in commemoration of the French revolution. The Champs de Mars was again selected as the site. The total space occupied was 173 acres. The largest building on the grounds was the Palace of Machinery, measuring 1,378 feet in length, 406 feet in width and having an elevation of 166 feet. The floor covered 11 acres. The total cost of the structure was \$1,500,000. The Palace of Arts cost \$1,350,000; the Palace of the French Sections, \$1,150,000; while \$500,000 was expended on the parks and gardens. Among these parks were interspersed that marvelous collection of villages which seemed to the spec-

tator to represent the world in miniature with Indian huts, Arabian tents, a street in Algiers, a Caledonian village, etc. The Eiffel Tower was the principal attraction.

EIFFEL TOWER BASED ON AMERICAN IDEA.

This structure, 984 feet high, was named after its inventor, a French engineer, who, however, has given credit to this country as having furnished the idea; possibly the Sawyer Observatory at the Centennial may have suggested it. Its base formed a gigantic archway over a main path in the central grounds of the exposition. The tower was of very simple construction, built entirely of iron girders and pillars, with four great shafts consisting of four columns each, starting from the four corners of the base, and merging into a single shaft, which formed the main part of the tower. This shaft ended in a great cupola or reception room, which in turn was surmounted by a still higher observatory, over 800 feet above the ground. The total weight has been estimated at 15,000,000 pounds, or 7,500 tons, and the cost at about \$1,000,000, the French government assuming one-third the expense.

CLOSES IN BRILLIANT TRIUMPH.

The exposition was in every respect a brilliant triumph. The exhibits surpassed all previous displays. The attendance exceeded the most sanguine expectation. The financial results were unexampled in the history of expositions, and so remain. There were fifty-five thousand exhibitors; of this number the United States furnished nearly two thousand. The total number of admissions by ticket was a fraction over twenty-eight millions. The attendance on the last day was four hundred thousand. The average attendance was one hundred and thirty-seven thousand two hundred and eighty-nine.

The most remarkable outcome of this exposition was the financial earnings, nearly \$2,000,000 remaining in profits at the close—something unprecedented and as yet unequaled in the history of international expositions.

It demonstrated, in a very effective way, the salient traits of the French character—its wonderful faculty of presenting the things of this world in such pleasing fashion as to attract and hold the attention of the most diverse temperaments, and the practical ability to closely look after the dollars and cents of those drawn into such charming toils.

CHAPTER III.

U. S. LIFE-SAVING SERVICE

Its Thrilling Exhibit—Proven Heroes, Every One—A Duplicate of Actual Stations—Daily Routine of a Station—Out with the Life Boat—Methods of Battling with the Elements—The Lyle Gun in Service—The ''Breeches Buoy'' in Action.

AN the life boat!" This cry, echoing many times daily never failed to send a thrill through spectators at the exposition.

To those who dwell along the seacoast, or the shores of the Great Lakes, it was a familiar story that never grew old. To those from inland points it added a zest of interest greater than most exhibits.

Splash goes the stanch little craft into the miniature sea constructed by the government to illustrate the prowess of its brave life-saving crews.

"Bang" goes the cannon that sends the life line to the storm beaten mariner.

Behold before our very eyes we witness the salvation of the storm-tossed and shipwrecked sailor, just as it occurs almost daily at some dangerous point along our extensive coast lines. The life savers are bending at their oars on their mission of mercy and unconsciously we hum a snatch from that good old hymn, "Throw Out the Life Line."

Never before had its significance been so deeply impressed. Probably six out of ten who watched the stirring scene broke into that song, or found it running through their minds.

PROVEN HEROES, EVERY ONE.

The exhibit was made by the Treasury Department and no pains were spared to insure its completeness. World's fair visitors thus saw exactly how the government life-saving heroes work along the vast American seaboard. The method of reaching storm-imperiled ships, of rescuing their crews, of reducing to a minimum the off-shore loss of life by shipwreck, all these were depicted in graphic detail, the most skillful men and the best equipment of the service being employed for that purpose.

A DUPLICATE OF ACTUAL STATIONS.

The model life-saving station was situated just south of the French pavilion, west of Skinker road, being constructed from plans drawn by James Knox Taylor, supervising architect of the Treasury Department, at a cost of \$8,000. Its interior was a duplicate of those in actual service, but the exterior design was more ornamental. It was surfaced in plaster and had a regulation tower about 50 feet high. The building was roofed with Spanish tin tiles painted red.

The keystone of the station's arched entrance represented an old-fashioned man-of-war under full sail. The building covered an area 43 by 70 feet, and among its striking features was the boat room, 40 by 43 feet, from which extended a run into the water of the lake, 40 feet distant. The boats were launched by means of this run.

Out in the lake, 400 feet distant from the station, was a drill-mast, 70 feet high, to which a yard 40 feet long was fastened. This yard was the target for the projectile fired from a mortar, carrying the lifeline as it is shot through the air to a sinking ship, exactly as in actual service. These simple preparations covered the preliminary work for the exhibit.

SPECTACLE WAS STIRRING.

The daily performance of the life savers themselves furnished a spectacle calculated to thrill the most phlegmatic souls. The men enlisted in the life-saving service are, as a rule, descendants of generations of hardy sailors and fishermen, and, both by heredity and training, are skilled in their dangerous work. The crew selected for the world's fair were picked men, some of them signally distinguished for bravery. For administrative purposes, the seacoast and lake shores of the United States have been divided into 12 districts, each with its quota of life-saving stations; consequently a chosen corps from the entire organization represents a high order of discipline and ability.

ARDUOUS SERVICE, DAY AND NIGHT.

The service is arduous day and night, as well as extra-hazardous when the incident of a shipwreck calls for the saving of life in a storm. During the winter a constant patrol along the coast is maintained, the various life-saving crews going on guard detail for this patrol work in successive relays. The stations in the same coast territory are connected

by telephone, so that when necessity arises one station may call another to its assistance or notify it of a vessel in distress that has been seen. Each of the 12 districts is under the command of a superintendent, and each life-saving station is commanded by a keeper. The former, though supposed to exercise but a general supervision, often personally assists in the work of rescue. Of their small number two have been drowned of late years, one has escaped that fate by the merest chance, and another has died of exposure.

DAILY ROUTINE OF A STATION.

The keeper of a life-saving station from his tower sweeps with his marine glass as much of the coast as is within range, keeping an especially close watch in stormy weather. He is also in telephone touch with the keepers of nearby lighthouses, who at once notify him if they have espied a ship in distress. In the event that a rescue is necessary, the station keeper musters his crew, directs the work and personally serves alongside his men. The crews of some stations are engaged in fishing or boating business of their own, but are subject to call at any hour. At the more perilous points they are exclusively in the life-saving service.

THE EVANSTON (ILL.) HEROES.

The station at Evanston, Ill., on Lake Michigan, has a crew which, with the exception of the keeper, is composed exclusively of students of the Northwestern University, and this collegiate crew has so greatly distinguished itself for pluck and efficiency that every member wears the government gold medal awarded for bravery.

TWO WAYS OF RESCUE.

The rescuing of persons imperiled by shipwreck must be done in one of two ways, either by the life-saving crews going out to them in surfboats or by firing a line to them from the Lyle gun invented for that purpose, and then employing the breeches buoy to bring them ashore on the cable line thus made possible. Both methods were illustrated in the world's fair exhibit. The more perilous of the two, from the standpoint of the life-saving crews, is that in which the surfboat is brought into service.

OUT WITH THE LIFE BOAT.

This is resorted to in cases where the firing of a life line to the distressed vessel is not practicable. The big surfboat is hastened to the

beach on a wagon constructed for that purpose. Its launching into the sea during a storm is a very dangerous task, requiring courage, strength and skill of unusual order. The members of the crew often range themselves on either side of the boat and force it out through the surf, springing into their appointed places at the proper moment, as best they can. Then begins the terrific hand-to-hand battle with the waves and wind, the master oarsmen bending themselves to the herculean task of sending their boat seaward in spite of the efforts of the gale and billows to hurl it back on shore, shattered and useless.

The surfboat is a mere cockle-shell opposed to the furious elements, but human skill, intelligence and courage are behind it and it is commonly the victor in such a contest, though there are many cases of failure and disaster attendant upon its launching. Once well out from the shore, however, the strain on the men and boat is comparatively relaxed.

METHODS OF BATTLING WITH THE ELEMENTS.

More often than not, when a surfboat has successfully made its way out to a vessel in distress the storm prevents its going directly to the side under the impulsion of the oars. In this case the boat is steadied some little distance away and a "heaving stick," with a line attached, is hurled to the deck of the ship. A heavier line is "bent on" to this light line by the ship's crew and drawn back to the surfboat by the life savers, and the surfboat is then cautiously warped up to the ship's side and the work of rescue begun. There have been instances where life-saving crews worked continuously for 24 hours at this perilous task.

THE LYLE GUN IN SERVICE.

When a ship is going to pieces near the shore, the Lyle gun is brought into service. The gun-carriage, or "gun-cart," as the life-savers call it, is run down to the water's edge and sometimes into the very surf itself. The gun used for this service carries a projectile to which a light-weight line is attached, the line being reeled up on another part of the carriage. It is here that the station keeper's gunnery counts, for he must so aim the gun that its projectile will pass directly over the endangered vessel, allowing the line to fall across the deck.

THE BREECHES BUOY IN ACTION.

Once this is done, a heavy cable soon stretches from the shore to the ship, and along this cable, by means of a machine operated by the life-saving crew, a "breeches buoy" is sent out to the rescue. The breeches buoy is simply a heavy leather contrivance into which the legs are slipped and from which it is impossible for one to fall. It is run to and fro along the cable, which, being swung from the crosstrees on the ship's mast, permits the buoy to be drawn shoreward, running along the life line on a heavy pulley, with as little contact with the surf as is possible under storm conditions. In the cases of panic-stricken women or unconscious persons, the members of the life-saving crew bring them ashore, the rescuers using the "breeches buoy" and bearing the rescued in their arms.

These and other important features of the service, including the method of resuscitating apparently drowned persons by means of artificial respiration, the best manner of swimming while bearing a body through the water, boat drills, and similar features of the life-saving service, were shown at the world's fair exhibit. The United States life-saving service is one of the most useful, yet least known, organizations under government direction, the details of its work, picturesque and adventurous to an unusual degree, constituting a series of dramatic spectacles that moved beholders to enthusiastic admiration.

ORIGIN AND SIGNIFICANCE OF THE SERVICE.

One has only to consider what the present development of the lifesaving service means to realize what strides civilization has taken of late years. While we seldom think of it, few departures of human endeavor so fully illustrate the tendency of the times as this governmental service, so magnificently demonstrated at the Louisiana Purchase Exposition.

It is only a comparatively brief period of time since wreckers used to light beacon fires along the seashore, particularly in dangerous places, not to warn the imperiled mariner, but to lure him on to destruction. From the wreckage these human vultures gathered a livelihood. It was a common practice in England, Ireland, Scotland and on the continent of Europe, and such stories have been related in connection with early seafaring experiences when this country was young.

It is probable that the efforts of monks and other members of re-

ligious orders in establishing bell-buoys in particularly dangerous places was the initial step towards creating a life-saving service—the nucleus around which this exceedingly humane department grew.

From this small start developed a movement that has been fostered by every civilized nation on the face of the earth, until each has an organized department devoted exclusively to the noble work of minimizing the terrors of the stormy deep. It is a source of no small comfort to Americans to realize that none exceeds in effectiveness that conducted by the United States along its ocean borders and the shores of the Great Lakes. Many volumes could be written concerning the bravery shown by the members of the service without exhausting the material afforded by their unselfish valor, as day in and out, throughout the livelong year, they battle with the elements and against both seen and unseen dangers, to grasp the victim of the storm from the hungry waters.

It is well that the Federal Government made possible this exhibit at St. Louis. Aside from the diversion and entertainment it contributed, every performance given was a sermon in which the principles of bravery, unselfishness, devotion to duty and humanity were impressed upon all thoughtful beholders with silent eloquence calculated to make it a life

lesson.

CHAPTER IV.

WORLD'S FAIR MUSIC

Sousa Sway-backed with Medals—Innes and His Band—Big Filipino Band—Indian Musicians Hastily Organized—Complex Instrumentation Described—Many Other Musical Organizations.

G IDEON'S is the only band even heard of that was not engaged to play at the Louisiana Purchase Exposition.

Sousa was here—the same Sousa who ordinarily received \$2.00 of your money when you heard his band in a music hall. Here it cost you nothing unless you felt that you wanted to listen from the comfortable vantage point of a reserved seat. Even then the charge was nominal.

SOUSA SWAY-BACKED WITH MEDALS.

Sousa looked well. He was a little sway-backed with supporting his medals, but his head did not seem uneasy from wearing the crown of the march king. He had a band of 65 pieces, and whenever any of the other bands began to win any of his auditors he waved his trombones and cornets to the front, levels these instruments over the rail of the bandstand, and turned on the "Stars and Stripes Forever," by John Philip Sousa. That's all.

INNES AND HIS BAND.

Innes was there—Frederick Neil Innes, a fine, chesty fellow, who got there blowing his own horn. He, too, had enjoyed his inning in the \$2.00 class and had filled Sousa's place—actually filled it. There are a good many bandmasters who would only rattle around in it, but it is to be remembered of Innes that he filled it. They are both old soloists of Patrick Gilmore's, the Columbus of the modern American brass band.

William Weil, the St. Louis bandmaster, had a band, the official band of the exposition. Additionally, Weil won some fame by falling out with the union over his world's fair contract, and paying a \$1,000 fine to the organization. He afterward played "The Union Forever" every pay day.

BIG FILIPINO BAND.

There was the Filipino band—the largest at the fair. It had 80 pieces, against 65 for Sousa, 50 for Innes and 40 for Weil. The Filipinos put their 80 pieces together and make a whole—lot of music. Really, they were good. They had temperament. The Sousa and Innes bands lacked that element. They had finish mostly.

Then, there was the Indian band at the Ethnology building. It hadn't any temperament, either. But it had a finish. One could see its finish looming up the moment he came within earshot. To escape having it become your finish, it was always best to fly.

Additionally, there were other bands, and then some. There was a German band, an Irish band and a wilderness of pipes and reeds, for, after arranging to get its money back, the exposition went in strongest for music.

You can imagine the result of having so many bands on the grounds. It was a battle royal of bands.

Sousa could hold his audiences better than any of the rest of them. This was because Sousa's name was big. He had written about all the marches except the Ides of March, by a composer named Shakspere. Then, too, Sousa was theatrical in method. He knew how to marshal his host to make it effective. When he saw his audience filtering away, presumably to hear Innes, he trotted his tubes around front, had them turned upon the crowd like so many cannon, and transfixed the people with a torrent of tone.

The Filipino musicians had an American leader. He was proud of them, and for good reason, for it was not only the best Filipino band at the fair, but a good band at that, if even now and then there did drift in upon the Filipino reservation the dulcet strains of Sousa calming the storm in the overture from "William Tell."

INDIAN MUSICIANS HASTILY ORGANIZED.

The Indian band came from the United States of America—and no less a place. It came to St. Louis from Chicocco, O. T., but the musicians simply assembled down there to practice before they came on to St. Louis. Of course, it wasn't very good at first, and their leader thought it would be wise to turn it loose on the north edge of the Llano Estacado and let it

wear some of its crescendos down a little before trying it on the crowds at St. Louis.

No one ever suggested that the American Indian might make a musician; but he is coming. The Indian band is a revelation, especially when it falls on one of its kith and kin like "Hiawatha" or "Navajo."

COMPLEX INSTRUMENTATION DESCRIBED.

The Sousa and Innes bands are not brass bands. Do not make the mistake of calling them that. They are concert bands. The Innes band even has string instruments in it.

There is an awful confusion of instruments in one of these concert bands. For instance, the Sousa band has an instrumentation that reads:

Twelve first b-flat clarinets, four second b-flat clarinets, two third b-flat clarinets, two e-flat clarinets, one alto and one bass clarinet, two oboes interchangeable with cor-anglaise (English) horns; two bassoons, four saxophones, four flutes, interchangeable piccolos, six cornets, two trumpets, two fleugelhorns, two euphoniums, interchangeable with trombones; four trombones, six French horns, four tubas, one Sousaphone and three drums.

The Innes band has two flutes, one piccolo, two oboes, one cor-anglaise, one petit clarinet in a-flat, two petite clarinets in e-flat, twelve first b-flat clarinets, six second b-flat clarinets, six third b-flat clarinets, one alto, one tenor and one bass clarinet, two bassoons, five saxophones, four French horns, five cornets, two trumpets, three trombones, two euphoniums, one baritone, three tubas, two string basses, one harp, one tympani and three drums.

MANY OTHER MUSICAL ORGANIZATIONS.

When Sousa was in Europe his band was considered the oddest that had ever blown in upon the fountain places of music.

As the season unfolded the bands poured in until it was well nigh impossible to keep track of their number. The famous Garde Republicaine band came from Paris, and fine bands from England and other countries. Regimental bands, state bands and government bands, too, filled the air with harmony. With three or four free band concerts afternoon and evening, in the spacious plazas reserved for that purpose, directed by the masters of the profession throughout the world, the fair afforded indeed a feast of melody.

Musical people and all who appreciate good music may thank the world's fair for three notable compositions, written upon the invitation of the exposition management. These are the "Hymn of the West," by the American poet, Edmund Clarence Stedman, the music for which was written by Prof. John K. Paine, who is at the head of the music department of Harvard University; "Louisiana," a march by Frank Vanderstuken, leader of the Cincinnati orchestra, and a waltz, "Along the Plaza," by Henry K. Hadley, of New York, who had won his laurels long before this as a writer of operatic and other musical compositions. This music was heard publicly for the first time upon the opening of the exposition, Saturday, April 30, and frequently thereafter in the musical programs of the greatest of world's fairs. These are the only official compositions, and were published under direction of the Bureau of Music of the world's fair.

Thirty thousand dollars was given in prizes for the best bands at a tournament held during the exposition. All through the world's fair, the musical feature being prominent, the most famous bands of the world were placed under contract to participate during considerable periods, contributing in no small degree both to the charm and the educational value of the exposition.

CHAPTER V.

QUEEN VICTORIA'S JUBILEE PRESENTS

Dazzling Arrays of Wealth—Will Never Be Exhibited Again—From India, Ceylon and South Africa—Clock Case of a Tiger's Skull—Gift of the Chinese Emperor—Maharajah's Lavish Gifts Beggar Description—Royal Chair of State—Worth More Than Weight in Gold—Gold Caskets Loaded with Gems—The Astors Couldn't Buy One Casket—Precautions Against Loss or Theft.

LADDIN with his wonderful lamp could not have conjured up so much wealth as is represented in the Jubilee presents to Queen Victoria, on exhibition in the Hall of Congress, immediately in the rear of the Administration building, at the world's fair, and forming one of the most interesting displays made by Great Britain.

Combined the presents represent a value beyond estimation. The most daring of men in estimating values would shrink from hazarding even an approximate guess on them. The dazzling array of jeweled boxes and caskets and cylinders alone stifle the mind when one thinks of the probable cost.

They came mostly from the loyal subjects of the late Queen of England in commemoration of her jubilee, and there is not another article like the one on exhibit anywhere in the known world. There are examples in silver and gold working that can not be duplicated. There are specimens of boxes and caskets that required years of painstaking care to execute, and others of ivory that could not be reproduced because of their size. The width of some of these boxes causes one to speculate on the huge tusks necessary to produce such a board of ivory.

DAZZLING ARRAY OF WEALTH.

The presents are arranged in glass cases and each has a small printed card explaining what it is and by whom sent to the Queen. Upon the walls are hung in frames addresses of the people and rulers as well as commercial bodies and municipalities of the world, to the Queen. There were three stalwart "bobbies," the pick of the London police force, al-

ways on guard, to say nothing of a half dozen Jefferson Guards, and William W. Forster, who was in charge of the exhibit, was there, too, from early morning to late at night. At the door downstairs was a Jefferson Guard to further protect the priceless exhibit.

WILL NEVER BE EXHIBITED AGAIN.

After the fair the presents will be distributed among the palaces of King Edward and will never be shown again.

It would be impossible to give a description of all the presents in the exhibit, but here are a few:

There is a worsted box containing two Indian shawls from the Vichar Sabha Ahluwalain of Rawal Pindi, Punjab, that is one of the marvels of weaving. The shawls are of the finest India produces.

There is a casket trimmed with gold from the municipality of Bombay, and another casket inlaid with silver and gold and precious stones containing the address of the Rajah of Babfili. Another casket is of silver filligree of marvelous workmanship from Sir Luchmessur Sing Babadoor, Maharajah of Durbhangan.

FROM INDIA, CEYLON AND SOUTH AFRICA.

From the Council of Ceylon comes an ivory box with trimmings of gold and set in rows of pearls and studded with rubies, emeralds and sapphires. From 35,000 British subjects in the Rand gold district is sent a gold plaque with "Victoria R. I.," set in the finest of diamonds, and from Australia is an ebony box resting on gold nuggets which also surround the imperial crown of thread gold.

CLOCK CASE OF A TIGER'S SKULL.

One of the striking presents is that sent by the Prime Minister of Hyderabad. It is the skull of a tiger trimmed in gold, with a clock and a chronometer in the sides. Highly polished tiger claws trimmed with gold are resting on the velvet stand supporting the skull, and in the center of the skull is the greeting engraven on a heart of pure gold.

CREATIONS FROM HUGE TUSKS.

The people of Kimberly forwarded an ivory casket trimmed with gold and studded with diamonds. The size of the sides and top and bottom of the casket shows how enormous must have been the tusks from which they were made. This casket could not be duplicated, as in all probability such tusks are now nowhere to be found in the world.

The inhabitants of Ceylon sent their address in a delicately wrought silver cylinder, the work of which required years of patient toil, and represents the highest art of the silversmith. It is supported by the tusks of three silver elephants, each of which is wrought in the high workmanship characteristic of the cylinder.

GIFT OF THE CHINESE EMPEROR.

The Emperor of China sent a scepter of jade, the engraving of which required years to execute, and it is pronounced the most perfect bit of this remarkable artistic work ever produced. It typifies long life, stability and immutability.

He also sent a lump of jade, upon one side of which is engraved a typical Chinese scene. The two are marvels of Chinese workmanship, and, it is said, could not be duplicated. There is also a Chinese plate of the finest porcelain, in four different colors, and it is roughly estimated as worth more than \$6,000. Such work is no longer done in China, so that it is impossible of duplication.

WONDERFUL SILVER AND IVORY WORK.

There is a gold cylinder, wrought in filigree and studded with precious stones, resting upon two ivory elephants that are exquisitely carved, that came from the Thakore of Morvi, the Thakore of Limri and the Thakore Sahib of Gondal. This is pronounced one of the most artistic bits of silver and ivory work in the world.

MAHARAJAH'S LAVISH GIFTS BEGGAR DESCRIPTION.

The Maharajah of Travancore, who is one of the most powerful of the Indian princes and whose wealth is fabulous, was most lavish in his gifts to Queen Victoria. One is a pair of tusks of the finest polished ivory, and they are said to be the largest tusks in the world. They are supported by the head of a buffalo in ebony, artistically carved. There is another pair of tusks trimmed in pure gold, representing the lotus leaf, and the base is composed of the bare teeth of the elephant, supported by ebony wood carvings of an elephant, and the whole is sprinkled with precious stones.

ROYAL CHAIR OF STATE.

His third gift was a chair of state, the like of which has never been produced before, and which brings to one the realization of the wealth of India. It is of carved ivory, with truss-shaped legs of ivory, and lions' paws in ivory as the feet. There is an ivory scroll, representing foliage, and there are two ivory lions, whose eyes are huge diamonds. The footstool is of ivory, trimmed with pure gold, and the kneeling cushion is of the finest texture, trimmed with gold. Words can convey no idea of the magnificence of this gift. Its value is fabulous.

ROYAL ELEPHANT SADDLES.

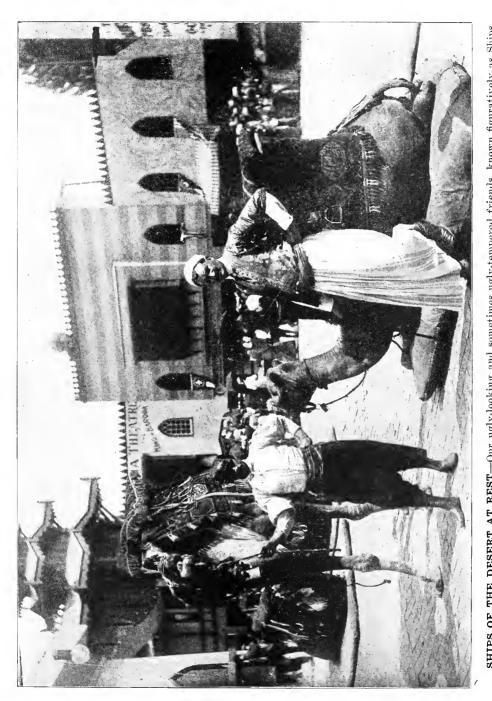
The municipality of Darjecling sent a silver prayer wheel, the work-manship of which is most delicate, representing the highest art of the Indian worker in silver.

Here are also shown gorgeous saddles for elephants presented by several Indian princes to the present King of England when he made his tour of India thirty years ago. These saddles are considered the finest ever produced, and for elegance and magnificence can not be equaled. They are shown in the exhibit as an example of the workmanship of the men of India in cloth. They are emblazoned with the royal coat of arms and as a whole give one an idea of the perfect workmanship of the East Indians as well as points in gorgeously artistic decorations.

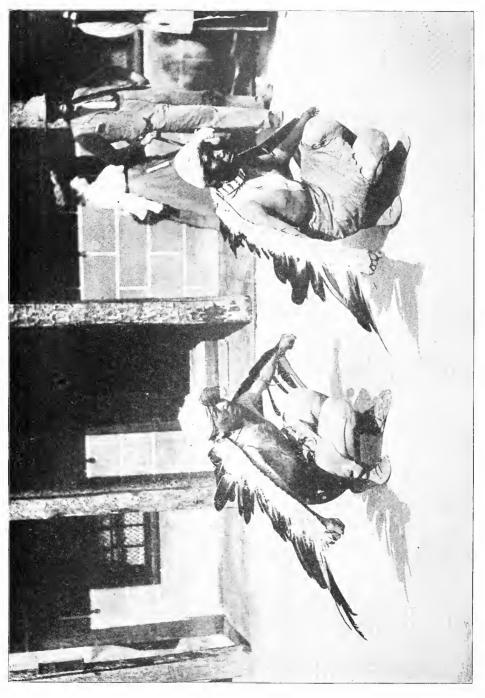
From the farmers and women of Cape Colony came a gigantic screen of ostrich feathers. This screen is composed of pure white feathers and is about 5 feet across and 6 feet in length. Its value is almost beyond competition. There are shown with it three enormous screens of peacock feathers that for beauty probably can not be duplicated.

WORTH MORE THAN WEIGHT IN GOLD.

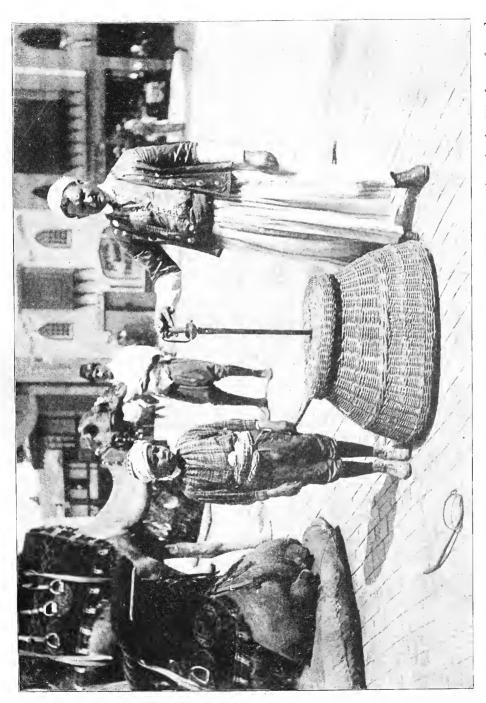
There is almost an inexhaustible array of caskets containing addresses from Indian princes and rulers and municipalities. Many of these are of ivory or ebony wrought with pure gold or silver trimmings and studded with diamonds of rare brilliancy or with rubies, emeralds and sapphires. Each of these is worth far more than its weight in gold. The diamonds alone are of the purest character and were specially selected by experts. There is one casket that contains the monogram of the late Queen in diamonds of four different shades—green, slate, white and pink.



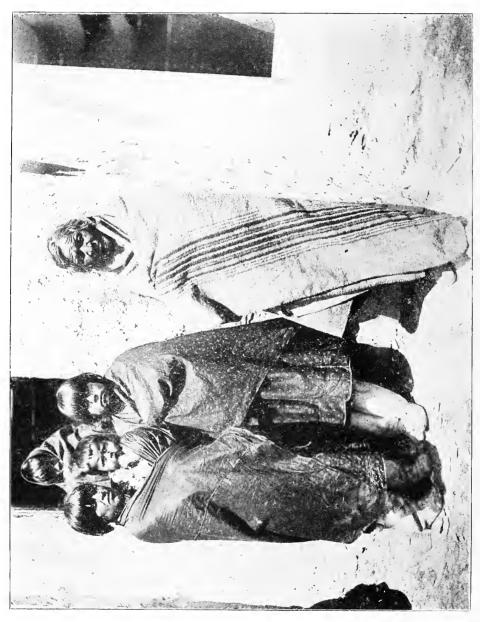
SHIPS OF THE DESERT AT REST—Our ugly-looking and sometimes ugly-tempered friends, known figuratively as Ships of the Desert, are taking a rest. Their keepers are waiting for customers, one of the camels lying upon a mattress and inviting a rider, the other making a vigorous protest against something not evident on the surface. This was a daily scene upon the varied and lively Pike.



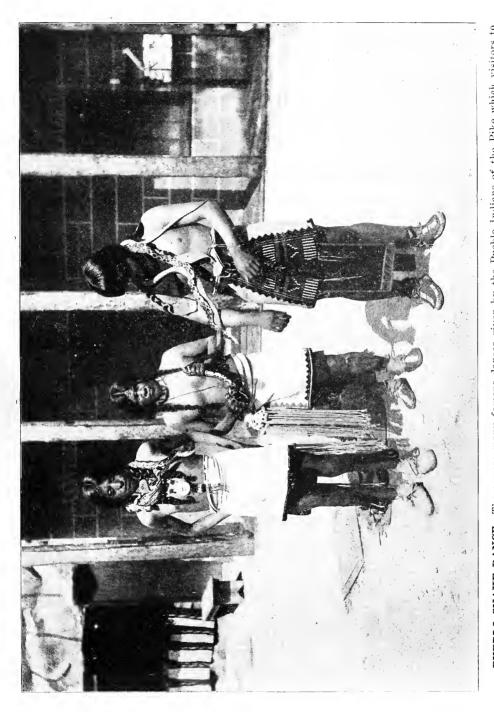
EAGLE DANCE OF FUEBLO INDIANS—Of the many unique features, which drew such a crowd of visitors to the Cliff Dwellings on the Pike, none was more taking than the Eagle Dance. With the eagle feathers attached by thougs to their arms and shoulders, those who took part in it, erouching and hopping along the floor, looked to be the veritable birds which gave their name to the dance. The resemblance was furthered by their peculiar headdresses.



ORIENTAL BASKET-TRICK—A Hindu trick, combining all the elements of the mysterious, is about to be performed. The boy standing leside the hasket will soon le covered with it, after which the lusty juggler will thrust the long sword through and through it. Profuse streams of blood will apparently flow from the pierced remains, and when the spectators are on the sharp edge of horror the smiling youth will step forth unharmed.



was as complete as any showing the descendants of the primitive North American tribes. Here are seen representatives of at least three generations of this rapidly-dwindling race found living now, as in Cortez's time, in the southwestern section of the United States. It will be noticed how the women bind their legs in thick woolen bandages. TYPES OF CLIFF DWELLERS AT THE FAIR—The concession of the Cliff Dwellers on the Pike



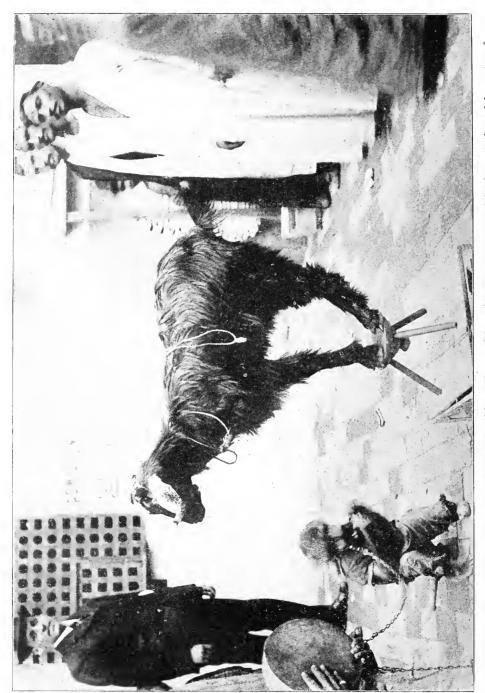
PUEBLO SNAKE DANCE—There were many famous dances given by the Pueblo Indians of the Pike which visitors to the exposition saw for the first, and probably for the last time in their lives. Some were graceful, some were frantastic and some were horrible. None combined all these features in a greater degree than the Snake Dance, which the trio above are about to execute.



IN FRONT OF THE BRITISH INDIA RESTAURANT—East India and Turkev have met in front of this favorite resort of the Pike, with the grim Ship of the Desert and his pleased young rider for background. The roly-poly young Turk in arms is having the time of his life. Each face, including that of his highness, the camel, in a study by itself, and shows how the exposition brought different peoples together in frie.dly contact.



DAILY SCENE ON THE PIKE—This is a characteristic daily seene along the Pike, when the Indians turn out for exercise and to call attention to their exhilition, which is one of the most popular at the exposition. (Trowds thronging the thoregonal) equal.



IN THE "STREETS OF CAIRO"—Simple things these with which to amuse a multitude, yet the trick goat and performing simeans in the "Streets of Cairo," on the Pike, proved popular entertainers. People flocked to the exposition for diversion, as well as study. They were willing and anxious to be entertained and enjoyed many laughs from simple scenes such as the one depicted.

The Chamber of Commerce of Singapore sent a silver case set with gems containing its address.

Lady Broomfield of England sent to the Queen a bust of the Prince Consort in ivory. The bust is nearly a foot in height and nearly a foot in circumference, showing that the tusk from which it was made must have been enormous. The carving is perfect, and, indeed, the late Queen is said to have considered it the most perfect likeness of Prince Albert that has been made.

GOLD CASKETS LOADED WITH GEMS.

The city of Toronto sent a gold and silver casket studded with precious stones, containing the address, and there are innumerable other gold caskets from all parts of the British Empire that are fairly loaded with gems. The carving on some of the caskets is marvelous, and each is worth a study by any one interested in art in gold working.

On many of the caskets and boxes the imperial crown is of gold, studded with the purest of diamonds, making the crown alone worth thousands of dollars. The cylinders containing addresses from various commercial bodies are often of pure gold, handsomely carved, and the filigree work of others is so delicate as to appear as spider webs.

The lavish display of gems in the various presents is what will first attract public attention. You couldn't find such diamonds and rubies and emeralds and sapphires in all of Maiden Lane, New York, where are the jewelers and gem sellers of the Western world. The caskets of pure gold are frequently trimmed with rows of pearls of purest character and studded with diamonds, making a single exhibit worth thousands of dollars.

ARTICLES NEVER TO BE REPRODUCED.

The ivory that has been used by the princes of India is alone of inestimable value, and the carvings in many instances could not be duplicated, and in others would not be, the ruler presenting the gift seeing to it that it is not reproduced either in whole or in part. There was never anything like it, and there will never be its like again. It is this one fact that frequently makes a gift of priceless value.

There is a Damascened gold and silver casket studded with gems, from the journalists and publishers of the Punjab, that is also of great value, and the workmanship of unequaled beauty and artistic design.

DECEPTIVE ANTIQUE EFFECT.

In much of the work by the people of India there is seemingly a crudeness. This is because frequently a gold or silver casket or box seems to be old and battered, but that is a distinctive bit of their art. One huge gold casket, set with gems, has a broken hinge; it is dented here and there as if some heavy case had fallen upon it or it had been dropped and trodden upon. However, that was the artist's own conception, and every dent was faithfully worked in and the broken hinge is a part of the study of the maker.

THE ASTORS COULDN'T BUY ONE CASKET.

There is one casket from an Indian Prince that is of carved ivory scroll with rows of purest pearls along the edge of the cover, and crossing the cover in the form of the letter X are two rows of gems, including diamonds, emeralds, rubies, sapphires and other precious stones. The pearls alone would require the fortune of the Astors to own, to say nothing of the other gems used solely in the decoration of the casket, which, being of carved ivory, is itself worth an enormous sum of money.

In caskets and boxes ebony and native woods have been very largely used. Sometimes they are perfectly plain and sometimes magnificently carved; sometimes they are studded with gems of rarity and then only with gold.

There is one small box, not more than six inches in length by two inches in height and four inches in width, that is of pure gold and almost solid, there being within only a small space for the address to the Queen. There is another box of about the same dimensions that is handsomely carved and with a large crown set with purest diamonds, while there are two rows of pure pearls used in the decoration of another. In the supports of one cylinder are three elephants of carved ivory, with the cloth engraven upon each, and the eyes are of rubies. And in the decoration of another casket are tigers in gold with diamonds for eyes.

PRECAUTION AGAINST LOSS OR THEFT.

Of course, it is understood that not all of the presents sent to Queen Victoria for her jubilees in 1887 and 1897 were in the exhibit at the world's fair. This would be an impossibility, as all of them would alone require an immense building. The exhibit, however, contained the cream of the gifts and was the same as shown in Toronto, coming

to St. Louis from the Canadian city. While awaiting the opening of the fair it was strongly guarded in safety deposit vaults.

At the exposition the utmost care was taken with the exhibit, and every case securely locked while the guards carefully watched every visitor, regardless of who he or she might be. Such precautions were absolutely necessary, remembering the fabulous value. The building was thoroughly fireproof and Colonel Watson was himself responsible for the safety of the collection.

THE ILL-LUCK OMEN COUNTERACTED.

Most superstitious women would have worried had they been in the position of W. Forster, custodian of the jubilee presents. Peacock feathers are said to be such omens of ill luck. Perhaps the fact that they were glass covered saved them from bringing any ill fortune upon the exhibit. Most women who have homes looked with a bit of envy upon the tiger chains of King Edward. They were suspended in the same case with the saddles and mountings presented to him when he visited India thirty years ago. Those same tiger chains would make the finest curtain chains. They are of silver links, rectangular shaped.

A gold calabash from the Gold Coast of Africa proved a delightful example of the grotesque in art. It is like a large flat gourd. On its top is carved the figure of a bird, not the kind of birds that fly here or anywhere else—a weird bird that looks as if it had seen bird ghosts. Below is a frog, still in something like the tadpole stage. The ideas in carving are those of the people who live on that Gold Coast.

All those born in December stood long in admiration before the cups and vases of silver set with turquoises. The vases are tall and have slender necks, and hanging from their handles are silver chains. Scattered over the vases and the cups are turquoises, just as if they were part of the silver of which the articles are made.

In the same case was a fine signal trumpet made of ivory with gold mountings and a cord and tassels of many colors.

Near the signal trumpet were three silver elephants fully caparisoned and with jewels set in their foreheads.

WONDERFUL GOLD SPECIMENS.

In the "gold" case, called so because it contained gold from the different mines of the world, were two remarkable pieces from the richest gold mines known—the Rand in the Transvaal and the mines of western Australia. One was a dear little box made of 30 nuggets of fine gold. Its border is a wreath of shamrocks, roses and thistles made in fine gold. The roses are delicately leaved and the shamrock looks well in gold, while the thistle points are sharp.

The "tiger head" inkstand is a useful thing that tells time and gives barometric reports at the same time. It is made of the skull of a tiger. One eye is set with a clock, the other with a barometer. The teeth of the skull close the inkstand. When they are opened in the place of the tongue is the inkstand, symbolical of the fact that it, too, can make words.

The ivory writing case and workbox is womanish. In it is a thimble of gold and golden scissors, suggesting the fact that Queen Victoria was first of all a woman. She was very fond of the spice box with its six compartments, inkstands and scent inhaler, all made of gold and silver and queerly shaped.

All in all, Queen Victoria's Jubilee Presents were far more than a Seven Days' Wonder. They not only were a continuous cause for admiration and astonishment during the season of the exposition, but were a speaking evidence of the boundless hoarded wealth of the Indies and the natural taste and patience of her native workers. Such wealth at the effective disposal of the energetic, practical Caucasian would advance the entire world of finance, commerce and industry.

CHAPTER VI.

GIANTS AT THE EXPOSITION

Patagonians Make Long Journey—Show Fondness for Whisky—Are Wonderful Horsemen
—Were Never Conquered—Spaniards First Brought Horses—Have No Historic Traditions—Women Flee from Men's Orgies—Marvelous Use of the Bolas.

HE giant has always had a place in legends and literature. No other member of the human family, the world over, has so readily lent himself to the imagination of humankind.

But never until now has the giant had a place at a world's fair. This is due to the fact that there is but one race of giants in the world—the Tehuelche Indians of Patagonia, at the extreme southern end of South America, and because never until now did any white man enjoy the confidence of these big barbarians to such an extent that he could induce them to leave the wilderness in which they live.

PATAGONIANS MAKE LONG JOURNEY.

The Patagonian giants—five of them—together with one woman, one child and a very small dog, arrived at the world's fair grounds after a journey of more than 10,000 miles.

Like other world's fair notables, the Patagonians were early subjected to the tortures of photography, and, while they enjoyed the novelty for awhile, they grew tired of it in the end, with the result that Mulatto, the big chief, took decisive action and put his foot down on cameras. This is a literal statement, too, for one overzealous photographer tried to take a picture of the chief against his will and the chief promptly assailed the picture machine.

SHOW FONDNESS FOR WHISKY.

They assume a sitting posture most of the time, smoke tobacco in pipes and do not talk much. One of them smiles occasionally, but the solemn expression on the countenances of the others seldom change.

The wife of the big chief is a study. Upon getting settled in her new quarters she smoked her pipe and quite frequently availed herself of a bottle of Kentucky bourbon. The Patagonians like whisky quite as well as some members of the Caucasian race, and it has the same effect upon them as is noticed in the North American Indian.

When the Patagonian gets his fill of liquor he is in a fighting mood, and woe unto the photographer who tries to photograph him.

The Patagonian giants at the world's fair were secured in the Terri-

troy of de Santa Cruz, in the Argentine Republic.

They follow farming to some extent, but spend most of their time hunting and fishing and training wild horses. The giants are expert horsemen and it is said that the average Patagonian can ride the wildest horse that was ever found in South America.

ARE WONDERFUL HORSEMEN.

Before the Patagonians agreed to come to the world's fair they exacted a promise that they should be given horses to ride. As an extra inducement the exposition representative said he would provide them with white horses.

Garbed in skins and blankets, the Patagonians were interesting, and Professor W. J. McGee, who was in charge of the Anthropological Department of the fair, said that the giants were one of the most satisfactory exhibits of his section.

Patagone, meaning big feet, is the word from which they take their name. It is a misnomer and is due to an amusing mistake made by early European visitors. The latter seeing the big skin shoes they wear in cold weather thought the foot coverings nature's gift, and so named them.

WERE NEVER CONQUERED.

The Patagonians were the most stubborn of all the wild people encountered by the Spanish conquistidores, and were never conquered. One of their forms of punishment is to cut off the soles of the feet, a custom which also obtained in Persia in early times. The average height of the tribe in the Chico valley, where they are tallest, is between 6 feet 3 inches and 6 feet 4 inches. It is customary to drink the blood of a horse at Patagonion Indian weddings. Formerly human sacrifices were made at wedding feasts. They formerly used the bow and arrow, but the bolas long ago supplanted these, and now a bow and arrow are never seen among them.

Childless women of the tribe formally and publicly adopt some creature upon which to lavish their affection. It is generally a little dog. Their only musical instrument is a sort of flute made of a bone. They are great people to paint themselves, which they do for show and also for protection from mosquitoes, which are a great pest in their country.

SPANIARDS FIRST BROUGHT HORSES.

Though there were no horses in Patagonia until the Spaniards brought them, the Indians have no legends of a time when they were not horsemen. Formerly, any Patagonian whose luck was bad, was privileged to slay any old woman in the tribe whom he regarded as being possessed of the devils that discomfitted him. Tehuelche children are not supposed to wear clothes until they are 6 or 7 years old, even in winter, and the winters are quite cold in that part of Patagonia where they live.

The peculiar manner in which the Indians dress in cold weather, with great hoods of guanaco skin covering their heads, make them seem much more gigantic than they are. The region inhabited by the Tehuelches extends northward from the Strait of Magellan along the western border of that part of the country adjacent to the Atlantic coast.

It is estimated that there are now but 500 Tehuelche Indians in Patagonia, though earlier travelers counted as many as 5,000 of them. Epidemics have greatly reduced their numbers.

When a Patagonian goes into mourning for the loss of a friend or a relative, he burns all he possesses. The Patagonian woman sews with bone needles, and her thread is the dried sinew of the guanaco. The dead are always buried in a sitting posture, as were the cliff dwellers of the southwestern United States. Their evil spirit is the lizard, and they propitiate their saurian satan by offering a horse as a burnt sacrifice. Their primitive armament consists of a long spear and a skin buckler covered with metal and shell ornaments.

HAVE NO HISTORIC TRADITIONS.

They have no historic traditions, and their oral records go no further back than their first meeting with Europeans. All Tehuelches like to have long hair, and the women oftentimes lengthen their braids with horse-hair switches. Patagonian babies are rarely seen. It is because of their lack of love for children and the epidemics that oftentimes sweep through their villages that they have almost become extinct.

The natives of Patagonia make their clothes of the skins of the guanaco, sometimes called the South American camel, because it can go for days without water. The Indians capture some 300,000 of them every year.

It is said that they were the first Indians in South America to appreciate the value of horses, and that they reached the height of their

power soon after the Spaniards brought horses from Europe and the Patagonian brave was enabled to ride against the wild footmen who were his foes.

WOMEN FLEE FROM MEN'S ORGIES.

When the Patagonian men decide to have a festival, the women and children of the tribe take all the weapons, war clubs, etc., and steal away into some gorge, where they remain in hiding until the men have done with their drunken orgies. Otherwise, the braves would kill all the weaker members of the tribe and would fall upon each other. The Patagonian horsemen of the plains are said to be nearer living Centaurs than any other riders on earth. They have beautiful horses, and when they ride at full speed, with their bronze bodies sitting their mounts as though a part of them, and their long black hair streaming out behind, they are beautiful specimens of the wild cavalier.

MARVELOUS USE OF THE BOLAS.

The expertness of Patagonians in throwing the bolas while riding at full speed has astonished foreigners who have penetrated into their country. Sometimes they can make a cast for as great a distance as 100 yards and bring down a flying deer, guanaco, wild horse or rhea. When they wish to catch the creature alive they use wooden balls on the strings instead of stones.

The Patagonian bolas is one of the most effective weapons ever devised by a primitive people. It consists of two round stones attached to opposite ends of a leather string, or thong. The native catches one of these in his hand and whirls the other about his head, finally launching it with great speed and accuracy. Whatever it strikes it coils around, and the stones will break the leg of a deer or rhea (South American ostrich), and even a man, while the strings will bind and throw a running horse. Sometimes the bolas has three stones instead of two.

The Patagonian attitude toward the mother-in-law was in former days far from the joke with which this member of society is regarded among civilized peoples today. The mother-in-law was held accountable for the death of any member of the family, and her son-in-law was compelled, whether he would or no, to take her out into some secret place and dispatch her with a knife. This duty was sternly exacted by the chief of the tribe.

CHAPTER VII.

WONDERS OF THE GLORIOUS PIKE

A Cosmopolitan Gathering—Like a Hasty Flight Abroad—Gazing Down Into Cairo—The Sim-a-la-la Man—Clever Curbstone Orators—An Oriental Mystery—Adieu to the Dancing Girls—What It Costs to See the Pike—Imperial Russian Opera Troupe—Snake Charmers—The Cliff Dwellers—Cingalese Devil Dancers—Spain and Paris—With the Eskimo Tribesmen.

E ARE on the grand old Pike at last, sitting in the International cafe.

Adown the Pike comes a babble of strange tongues, the sound of unfamiliar instruments, the noise of many bands, the roar of animals from many climes, the voice of "barkers" descanting upon the various entertainments along this great cosmopolitan thoroughfare, the tramp of countless feet and the indescribable din that only thousands hastily thrown together from all parts of the globe could make in the exultation of a play day, free from all restraint.

At the next table sits a grim old Sioux warrior in all the glory of paint and feathers. Beside him is a Boer, resting after the performance at the South African Concession. A giant negro in the habiliments of the African desert makes up the third member of this strange group.

A COSMOPOLITAN GATHERING.

Near at hand are a dozen young women from the Russian village opposite, who have run in to rest a moment before their next show. Robust, swarthy of face and in the gay attire of peasants of the Crimea they form a strange contrast to the solemn visaged and ebony hued son of the desert who sits staring at them. Three Turks in fez and baggy garments have stopped to chat with them and a couple of Filipinos are drawing up chairs. Far Cathay, too, is represented, for have we not a group of Chinese in court costume drawing near?

Off in the corner a band of French musicians are playing a lively air that smacks of the shores of the Mediterranean. A Venetian gondolier, stopping on his way to work, has been caught by the familiarity of the tuneful selection and has burst into song—a song from the heart, of sunny lands he longs to see.

LIKE A HASTY FLIGHT ABROAD.

We have suddenly been transported beyond the mundane confines of prosaic America, with its eternal business and routine commercial grind. We are now in the heart of the Street of all Nations; the Mecca toward which all known peoples of the world have turned their faces, to mingle as never before.

Kipling has told us of sitting in an unheard of little retreat at Port Said in the heart of the district given to the whirling, dancing girls, fakirs and the wanderers of the earth; of seeing strange sights, while being half deafened by the indescribable maddening clatter of almost innumerable nationalities. In the few minutes it has taken us to step from the fair grounds proper into the Pike we have discounted Kipling and his experiences.

In the heat of the hour, gazing through the latticed windows up and down the brick paved thoroughfare with its shifting sands and its shifting multitudes of strangely mixed humanity, it would require no great stretch of the imagination to carry one to Cairo, Bagdad, distant Bombay—or for that matter to any point within the knowledge of man on the face of the earth.

GAZING DOWN INTO CAIRO.

Through those same latticed windows we gaze down into the courts of Cairo. Lumbering old camels move slowly back and forth and the patient ass rivals the donkey boy in seeing which can move the slower. From every niche and corner a merchant, fresh from the bazaars of the Orient, calls forth the quality of his strange wares. Whirling dervishes and dancing girls, whose muscles obey their every desire, are performing weird evolutions for the edification of the open-eyed and openmouthed throng.

A huge simeon, whose resemblance to his tawny master suggests eloquently the correctness of the Darwinian theory, has caught our eye. Ah, he begs! Again we comment on the resemblance between master and monkey. We flip him a penny through the latticed window. He has caught the coin! He looks at it disdainfully and hurls it far away. We

toss him a nickel and with greedy paw he hides it in his tiny bag. Like his associates, this child of the jungle has learned the value of Backsheesh.

THE SIM-A-LA-LA MAN.

But we are wasting time on monkeys. Behold these two towering figures that approach astride a sorrowful ship of the desert. With what lusty strokes they beat the time-worn kettledrums slung across the camel's hump. One is about to speak; let us hear what he has to say:

"Sim-a-la-la! Good-a-sim-a-la-la! Very-good-a-sim-a-la-la! La!!!" Bravo! He has made a hit. We must confess we don't know very much about the subject of this learned discourse, but it must be all right, for there goes the throng in the wake of the weary camel and the lusty sim-a-la-la man to a distant corner where fiery spirited, piratical appearing individuals are about to engage in a deadly assault upon each other with blunt swords.

CLEVER CURBSTONE ORATORS.

And now another familiar sound smites the ear. It is the cry of the "barker". The genial "spieler" is abroad in the land and he numbers legion. Listen to his convincing logic, his masterful argument, glowing eloquence and seductive, alluring invitation to witness the best show on the grounds. In stentorian tones his voice assails. Somehow we have fallen under the influence and find ourselves drifting from the International rendezvous to the sphere of his influence. Like the ancient mariner, he holds us with his glittering eye. It is worth the price of admission to hear this Pike orator enlarge upon the beauty, incomparable grace, marvelous ability and the other characteristics of La Belle Fatima, Le Belle Rosa and Little Egypt.

"They are here," he cries. "They are here, giving hourly exhibitions of their wondrous art, precisely as they have done by royal command before the crowned heads of Europe."

"They are here," he cries again. "The famous, the unrivaled La Belle Fatima, the resistless Little Egypt, just as they appeared before delighted multitudes at the great Columbus Exposition at Chicago."

AN ORIENTAL MYSTERY.

We smile, for have we not seen an army of La Belle Fatimas at all points of the compass and encountered the beauteous daughter of Egypt performing simultaneously in New York and San Francisco? But why smile? Behold, they stand before us in all the charm of tinsel and of paint.

Ah, it is refreshing to behold these beauteous maids at this moment and realize that when we turn away we shall encounter La Belle Fatima and Little Egypt in at least four other shows before we have walked as many hours. Yes, Little Egypt is here. It is part of the mysticism of the East that there should be so many of her.

We pass on. Wherever we go strange sights and stranger sounds are met. Entertainers and tradesmen of every land and every clime besiege us with their wiles to leave our shekels with them. In twenty minutes we can speed from the Tyrolean Alps to Mysterious Asia; we can reach the spot where Creation is re-enacted several times a day, then pass on to the realms of eternity. We can visit the North Pole, bury ourselves in the strange habitations of the Cliff Dwellers in the delights of a submarine journey. We can board the fast express and fly along the route of the Trans-Siberian Railway. We can lunch in Japan, partake of dinner in China and spend the evening in the tea gardens of Ceylon. Lovers of the gruesome may witness the destruction of Galveston and those of a warlike spirit may revel in a battle at sea. Truly it is wonderful—this street of all nations and gathering place of all peoples.

ADIEU TO THE DANCING GIRLS.

With nearly two miles of attractions and forty-four distinct shows, it cost less than \$20 to go down the world's fair Pike, from "A to Z."

The general admission to any show on the Pike was not more than 50 cents, while the vast majority of them cost only 25 cents to enter the main gates. A few charged only a general admission of 10 cents, while reduced rates, in every instance, were made for children.

The Pike attractions at the world's fair outnumbered those of the Chicago exposition by a ratio of two to one, while the area covered was greater.

No exposition ever given in the world has offered the number and variety of attractions in a similar department as were offered by the Louisiana Purchase Exposition.

WHAT IT COSTS TO SEE THE PIKE.

While a world's fair visitor could begin at the first Pike show and see every attraction along the line, he could not spend any money for wares that would be offered if he desired to remain within the limit of \$20.

A conservative estimate of the cost of "doing the Pike," and adjoining concessions of a character that places them properly in Pike classification, follows:

German Tyrolean Alps—General admission, 25 cents; four attractions; combined admission, 70 cents. Total, 95 cents.

Irish Industrial Exhibit—General admission, 25 cents; admission to Irish Theater, 50 cents; other attractions, estimated cost, 50 cents. Total, \$1.25.

Under and Over the Sea, an Illusion—General admission, 25 cents; no other charge.

Mysterious Asia—General admission, 15 cents; combined charge for admission to native theaters and other attractions, 60 cents. Total, 75 cents.

Streets of Seville-General admission, 25 cents.

Temple of Mirth-10 cents.

Moorish Palace-General admission, 25 cents.

Glass-Weavers' Palace-General admission, 25 cents.

Hereafter, an Illusion-General admission, 25 cents.

Hagenbeck's Wild Animal Show—General admission, 25 cents. Five inside attractions, with a combined admission charge of \$1.

Ancient Rome, including Coliseum, Roman Theater and Street of the Augustine Period—General admission, 25 cents. Combined charge for other attractions, 75 cents. Total, \$1.

Old St. Louis—General admission, 25 cents; admission to arena and other attractions, 40 cents. Total, 65 cents.

Creation, one of the largest illusions on the Pike—General admission, 50 cents.

Paris and French Village—General admission, 25 cents; admission to theater, 25 cents; other attractions, 25 cents. Total, 75 cents.

Palais du Costume-General admission, 25 cents.

Infant Incubator-General admission, 25 cents.

A trip to Siberia and Russian Village, combined in one attraction—General admission, 25 cents; additional charges, 35 cents. Total, 60 cents.

Imperial Russian Opera company from Moscow, in pleasing characteristic songs and dances—General admission, 25 cents; no other charges.

The Cliff Dwellers—General admission, 25 cents; theater, 25 cents; snake dance and other attractions, 25 cents. Total 75 cents.

Chinese Village—General admission, 25 cents; admission to Chinese Theater, 25 cents. Total, 50 cents.

Eskimo Village—General admission, 25 cents; combined charge for other attractions, 25 cents. Total, 50 cents.

Jim Key, educated horse-General admission, 15 cents.

The Old Plantation—General admission, 15 cents.

The Magic Whirlpool, spectacular—General admission, 15 cents.

Battle Abbey, eyclorama and plastic battle history—General admission, 25 cents.

Deep Sea Diving, showing divers in operation—General admission, 15 cents.

Naval exhibition, with miniature battleships in action—General admission, 25 cents. Extra charge of 25 cents is made for reserved seats.

The Galveston Flood—A mechanical picture of the destruction of Galveston. General admission, 25 cents.

New York to the North Pole—An illusion. General admission, 25 cents.

Fairyland-A water chute idea. General admission, 10 cents.

Colorado Gold Mine-General admission, 10 cents.

Poultry Farm-General admission, 25 cents.

Hale's Fire Fighters-General admission, 25 cents.

Japanese Village—General admission, 25 cents. To Japanese Theater and other attractions, 50 cents. Total, 75 cents.

Constantinople and Cairo-General admission, 10 cents.

Transvaal Spectacle-Admission, 25 and 50 cents.

IMPERIAL RUSSIAN OPERA TROUPE.

All the Russian Pike exhibits were in the hands of this same concessionaire, although the principal one, the Imperial Russian Opera troupe, was accorded to a Russian-American manager and actor, Ellis Glickman, whose Yiddish impersonations had made him famous in all the larger cities of America. In his Russian theater at the very center of the Pike, opposite the International cafe, were assembled about 50 clever

Muscovite performers, who gave a splendid operetta several times daily and each evening.

In this troupe were some twenty Russian young ladies, very beautiful, of the better class who were renowned for their singing and the dancing of the Russian national and peasant dances. Many could speak no English, but were proficient in German, French or Italian. Most of them were accompanied by relatives and all were famous for their beauty and ability in their special line.

Russian songs and dances are wonderfully lively and are entirely different from anything seen in America. The wonderful melody and rhythm of the chorus songs are always favorably commented on by American writers.

Russia has never before been represented at an American exposition, hence these productions, aside from the war interest, attracted the studious and the curious as well as the pleasure seeker and music lover.

Notwithstanding Russia's withdrawal from official exhibition and notwithstanding that Russian merchants patriotically donated the several millions of roubles intended for exhibits at St. Louis, to the "Red Cross" Society for the relief of suffering soldiers, (an action that American merchants might have approved and adopted under similar circumstances) the enterprising Russians put in an appearance in good style after all their troubles. Their exhibit on the Pike included a trip over the Trans-Siberian railroad, a Russian village and Russian eating house.

SNAKE CHARMERS FROM DISTANT LANDS.

Men who are apt to drink not wisely but too well during the giddy whirl of the world's fair, probably know that sixteen Hindoo snake charmers were on hand to add to their exhilaration. With the snake charmers were also some Indian jugglers.

With the Moqui snake dancers the Indian charmers gave a very fair representation to the snake industry. The Indian charmers belong to the class of industry which exists in both India and Ceylon, the members of which make their living by hypnotizing the deadly cobra de capello, which is only found in those two tropical countries.

The Hindus brought with them a supply of the reptiles for charming purposes. Mr. Peter de Abrew, of the Ceylon Commission, states that although these serpents are poisonous nuisances they are held in reverence by the Cingalese and Indians, and it would be very hard to induce them to kill one of this snake family.

They are always taken alive, the method being to noose them into a bag, and release them in a jungle. The cobra has an ear for music, and knowing its weakness the snake faker gets his pipe, and with its siren tones lures its from its fastness. Under the spell of the harmony it shakes out its beautifully marked hood to the tune of the music, while an assistant of the musician grips at the head, taking care that it does not sting him, and then draws its fangs with a pair of pincers.

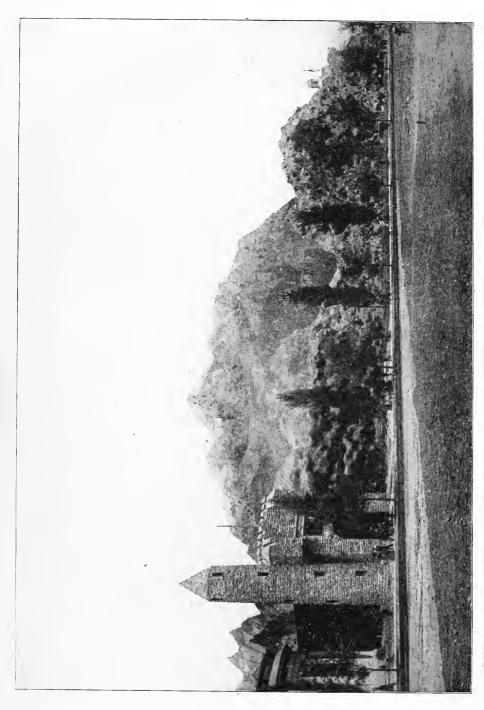
After this his snakeship is caged in a basket and gradually learns to know his master, and what tricks are expected of him. With other snakes whose fangs have been drawn he travels about the country with his master, who, for a pittance, plays his music while the snakes dance their hoods in time to it.

THE CLIFF DWELLERS.

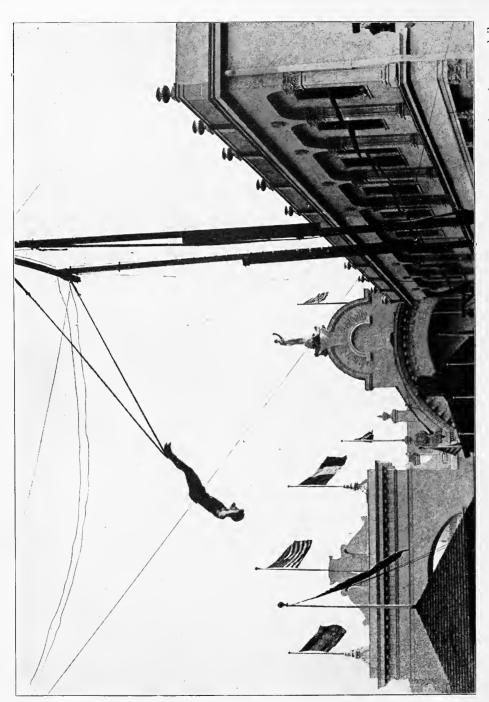
One of the interesting shows at the world's fair was the native pueblo of Cliff Dwellers on the Pike. This was in charge of W. Maurice Tobin, who is said to be America's best known exhibitor of these strange people.

The true American was found in this historical aggregation. These people are the direct descendants of the Moki and Zuni tribes, which met the Spanish conquistadores 350 years ago. They come from the famous Mancos and Casa Verde canyons of Arizona and New Mexico, and are as picturesque and interesting today as they were to the early explorers.

The Cliff Dwellers' home on the Pike was an exact reproduction of the rude habitation in the remote canyons. The exhibit was so arranged that the public could climb up the 100-foot cliff which represented the Moki pueblo, and passing through these dwellings obtain a correct idea of the habits, modes and customs of these prehistoric people. A visitor might see them in all their industrial activity, including basket-making; a native pottery in operation; blanket weaving; native artisans and silversmiths plying their crafts; a reproduction of the famous church of San Miguel, in which a museum of curios and ancient relics was shown; the Moki catacombs exhibiting the manner of burial of the ancient race; native goats, burros and dogs wandered about the village, giving a touch of realism to the exhibition. In the Moki theater the lighter side of the life was shown; quaint bridal costumes, native dances, ancient chants, a native orchestra playing on stringed instruments made of dogs' ribs,



THE TYROLEAN ALPS—One of the wonders of the Pike was this masterpiece of scenic workmanship in canvas, rock and staff. The extreme west end of this concession is seen in the illustration, with just a small bit of the Irish village appearing at the side. The entrance can hardly be seen in the distance.

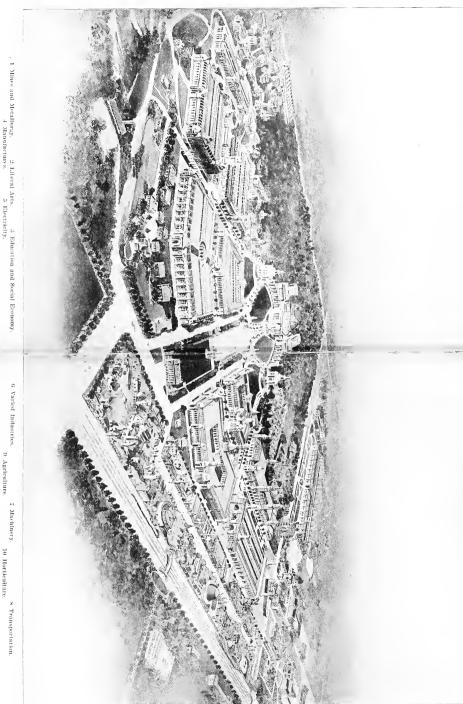


FLYING WONDER FROM CENTRAL AMERICA—One of the greatest feats on the trapeze ever performed was a daily feature of the Pike. The flying wonder was a native of Central America, M. Samayon, and his stunt was to shoot away from the trapeze, turn a somersault in the air, and twenty-five feet away to save his neck by grasping a dangling rope. A miss would probably mean death.



BUSSIAN IMPERIAL TROUPE AT THE FAIR—Aggregation of Muscovite entertainers gathered by Ellis F. Chickman in all parts of the Caar. These seldom-heard performers staged a characteristic Russian operetta that delighted thousands of visitors to the Pike. Many of the singers displayed rare vocal ability, while all danced with spectacular grace and agility.





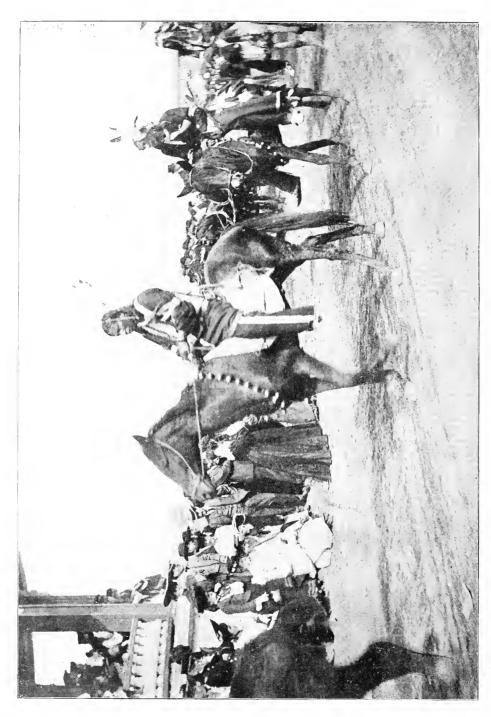
BIRD'S.BYE VIEW OF THE FAIR—The wonderful Cascades, with Festival Hall thrown over the merry din of the cosmopolitan Pike, and its weird spectaculars are and the picturesque (strictures—the Palaces of Art, Education, Bekericity, Agriculture, Machinery, Transportation, and Varied Industries, the Alministration, Government and State edifices, arise as distant dreams of heavy and power. A manufe of silence is memorantes the transfer of a great territory only a century ago. 4 Manufactures. 2 Liberal Arts. 3 E-tures. 5 Electricity.



SILENCE AND FUN—This furry actor, a star performer in the "Streets of Cairo," caused thousands to halt in their march up the Pike every day, and to stand in the broiling sun to watch his performances. If tossed a penny he would disdainfully throw it away, but a nickel or dime was greedily seized and stowed away.



SONS OF THE DESERT—Here we have the spirit of the Pike personified. In the foreground are Abdallah Ashi and his faithful long-eared steed. Resting against the wall a camel can be seen, half concealed beneath an array of gorgeous trappings. The pirture was a characteristic scene, enacted daily all along the Street of All Nations.



ON THE WAR PATH AT THE FAIR—Oo! Ooh!! Woopee!! The Indians approach, grim figures upon their fiery ponies. The fleree and warlike Sioux no longer hunt the pale face's scalp, but camp on the trail of his mighty dollar with great persistence. One of their favorite drawing cards was to make a sortic on the Pike, with noisy whoops and Jingling bells.

sheeps' toes, tortoise shell rattles and sun-baked squash. A company of boomerang throwers exhibited their skill, and the native priests showed for the first time in this country the marvelous snake dance of the Moki tribe. The exhibit from an historical, ethnological and educational standpoint, was one of the features of the world's fair.

SPANISH INVADERS ARRIVE.

The story of the meeting of these primitive people with the Spaniards is one of deep historical interest. It is related by Mr. Tobin, who had heard it from the chiefs of the tribe.

"Beneath the town then perched on the higher slope of the Wolpi mesa, came a band of horsemen," he said. "Some were clad in armor and warlike trappings badly damaged and battered by wear and tear, but impressive to the Indian, who for the first time saw the white man. Perhaps the Mokis were not very friendly. The warrior priest strode down the trail followed by his band and drew a line of sacred meal across the path to the town, over which, according to immemorial custom, no one might come with impunity. This 'dead line' brought death instead to the Mokis. At the fire of the dreadful guns they fled up the narrow trail to refuge. The Spaniards dared not follow up the rocky way, but camped for the night by a spring. This is the first picture of the Mokis of Wolpi, who were thus introduced to the proud Castilian, bent on reaching new lands to despoil."

And the Indians of those days are the forebears of the Mokis and Zunis who were on the Pike.

CINGALESE DEVIL DANCERS.

Among the weird and interesting customs of the Orient shown on the Pike there was, perhaps, none more so than the devil dance of the Cingalese performed by a troupe of natives from Ceylon. Devil dancing is an institution introduced into the island from India. The dancers are all powerful men of excellent physique, whose attainments have the dignity of a profession in the island.

They have a leader called the Kattendija, who trains the dancers, not only in their steps, but also in the incantations which go with the dance.

The dance is meant to invoke the help of Devas and to disperse evil spirits or elementals which populate the astral world, and are supposed to bring about certain kinds of sickness. The afflicted having faith in this

particular form of cure, seek the aid of the devil dancer, who goes through the imposing form of ceremonial at first, afterwards calling his troupe into service by dancing and chanting to the accompaniment of music.

The dance is performed generally at night by the light of torches and to the accompaniment of clouds of burning incense, the scene being both weird and picturesque. The ceremonial has no connection with the religious beliefs of the Buddhists, instances having been known where natives converted to Christianity have sought the aid of the devil dancer.

SPAIN AND PARIS ON THE PIKE.

Spanish dancing was one of the features of the Streets of Seville. This concession was divided into six departments. The Court of Lions, which was considered one of the most artistic portions of that historical structure, the Alhambra, erected by the Moors at Granada in the Thirteenth Century, was reproduced. The market place of Triana, in which Spanish and Mexican wares were sold from booths, was one of the principal features of the exhibit. Dancing and other frivolities also contributed largely to the performance at "Paris on the Pike."

WITH THE ESKIMO TRIBESMEN.

There were very few more interesting exhibits of strange people than that of the Eskimo village on the Pike. This was a veritable village with all the phases of life found in the homes of the northern wilds. The famous explorer, Capt. Dick Craine, a picturesque argonaut, was manager of the attraction.

There were 28 real Eskimos in the village. Eighteen came from Behring Sea and the balance from the country around Labrador and Hudson Bay territory. Those from Behring Sea were in charge of the famous guide, L. L. Bales, who accompanied the late President McKinley through Alaska. In the group was Scondo, the great chief of the Aleutian islanders. Seventeen tons of prehistoric instruments of war, peace, music and the arts were among the many features on exhibition.

Besides these there was the noted "Hootch," the United States mail dog, driven by Mr. Craine over 74 miles of snow in one day. Then came herds of other noted Eskimo dogs, reindeer and numerous other attractions, exhibiting the natives in their daily life, such as by dances, sports, singing and wedding ceremonies.

CHAPTER VIII.

THE PIKE'S SPECTACULARS

Under and Over the Sea—From New York to the North Pole—All Aboard for the Pole—A Review of Old St. Louis—Story of Creation Depicted—Awakening of Life—An Artificial Whirlpool—Hereafter, a Gruesome Show—A Tour of Hell—Ancient Rome Reviewed—Hale's Great Fire Exhibition.

In THE way of brilliant, bewildering and gorgeous spectaculars the Pike never had a rival at any international exposition. They depicted everything in the heavens and earth, over and under the sea, real or imaginary, horrible or charming. Hell, the Creation, the North Pole, Rome, dizzy whirlpools, lofty mountain peaks, calm sunsets—nothing was overlooked.

"UNDER AND OVER THE SEA,"

One of the first and most novel features encountered on reaching the Pike was Under and Over the Sea, an illusion depicting a trip to Paris by submarine boat and return by airship. In a mammoth building the huge black oval back of the submarine boat is in plain view of the passer-by. Passengers are seen entering through the open hatchway, which is then closed and hermetically sealed and the boat sinks from view, swallowed in the great pool. Down, down the boat appears to sink to the ocean's very bed. The dense marine growth, forests of tall plants and trees, coral recesses, reefs, and rock caverns, all holding some form of fish life, can be seen through the plate glass windows of the boat. The great searchlight sends its rays through the transparent waters as the boat rushes onward, and the topography of the ocean's bed completely changes. What a feast for the eyes—a perfect kaleidoscope of green, yellow, orange, violet, indigo and blue. It is the mermaids' playground, their beautiful gold and silver be-scaled bodies within arm's length of the boat. as they gracefully bound through the water. Monsters of the deep are overtaken and quickly left behind. Arriving at Paris after an eventful voyage and disembarking, passengers are taken in elevators to the top of Eiffel Tower. From this vantage point a birdseve view of the French metropolis is afforded.

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AIRSHIP IS NEXT.

Here a massive airship restlessly tugs at its moorings, and all aboard, the weird craft commences its flight through space. Like a bird's, the great wings move, and soon the fading city is but a speck. With the swiftness of the lightning's flash the airship dashes along the pathless wastes. Aerial monstrosities, comets, meteors and electric storms are met and passed in safety, and soon the distant illumination of the exposition greets the bewildered vision. The great bird-like ship descends, and passengers find themselves once more on the Pike.

FROM NEW YORK TO THE NORTH POLE.

Somewhat similar is From New York to the North Pole, slightly removed from the Pike, yet classed among its attractions. It describes the trip from which it takes its name, the spectator boarding a realistic ship at a typical New York pier. On the side of the ship next to the building the passengers begin to experience the delights of a summer sea trip. When the anchor is weighed the siren shrieks and the engineer gets his signals through a tinkling bell, the cord of which is pulled on the pilot bridge.

ALL ABOARD FOR THE POLE.

As the vessel apparently gets under way the stentorian tones of the captain's voice are heard as he shouts his orders. Real water rushes by the ship's side and a view of New York harbor, with many puffing tugs is seen. Sandy Hook slips by and the Long Island shore fades into the distance as the vessel passes from the brown water of the harbor and breasts the blue waves of the Atlantic.

As the ship proceeds northward the weather changes, and when the frozen Arctic waters are reached the stewards hand around wraps and hot tea to the women, the men having provided themselves with stronger warming beverages to ward off the chilly blasts that are swept from the icebergs.

The ship is finally blocked in the ice floes and sleds are brought out. The passengers are transferred to these and the hunt for the pole is continued over the ice.

A few of the caches built by Greeley and Peary are visited, and in one place a document is found revealing the easiest and nearest route to the Pole. This advice is followed and beneath the everchanging rays of the

Aurora Borealis a tattered American flag is seen flying from a jagged spur, which is found by the instruments to be the true apex of the earth.

The spectacle was conceived by E. J. Austin and built under his direction for Emmett W. McConnell, who controlled the Galveston Flood and Battle Abbey exhibits.

A REVIEW OF "OLD ST. LOUIS."

An interesting feature of the Pike was "Old St. Louis."

The historical old Cabildo of New Orleans, reproduced, was seen at the entrance of the concession. The first church built in St. Louis was reproduced, and in it were heard lectures on the early history of the city. The old Courthouse was reproduced and in the Government House a play recalled the purchase of the Louisiana Territory. Napoleon, Livingston, Monroe and Marbois, the main figures in the vast transfer were all portrayed.

Here and there in the concession were seen reproductions of the homes of old settlers of St. Louis, who lived there before 1803.

A Wild West performance in a big arena and an orchestra and restaurant with singing girls, yodlers and high wire performers complete the concession.

STORY OF CREATION DEPICTED.

"Creation" was a Pike attraction of commendable merit that appealed strongly alike to religionists, lovers of the artistic, students of the possibilities of stage craft and the merely curious. It was, perhaps, one of the most delightful things of its kind and cost not less than a quarter of a million to install for a few brief months. Unlike most world's fair side-shows there was a lasting satisfaction in having seen it and carefully examined it.

At the entrance of the panorama was an immense and strikingly beautiful sculptural piece, the artist's conception of Eve, the first woman. Back of this figure was a large waterfall, which had frosted glass for its background, and to either side there were seen wide streams of running water.

Little boats, with seating capacity for six persons, floated in these streams, and, starting at the water falls, at the base of the Statute of Eve, one was taken through winds and turns, until, after going twice around the dome, he found himself in the midst of the vast amphitheater, with the chaos of the unmade world facing him.

A TRIP TO EDEN.

The journey to the amphitheater was one of the most remarkable illusions to be seen on the world's fair Pike. Drifting slowly down the stream, one passed beautiful scenes, which were allegorical descriptions of the world at its various stages. From the Garden of Eden he was lifted gradually through every century, until he finally completed the circuit of the water race and looked upon the pictures of the Twentieth Century.

Entering the amphitheater, the scene was begun over again. The chaos effect obtained by the designer, Roltair, was a master effort in art conception.

Volcanoes were seen at a great distance, emitting smoke and lava from their craters. The land and waters were mixed, the clouds intermingling with the whole, and one great scene of utter disorder met the eyes of the spectators.

One by one the scenes changed. The volcanoes died. The clouds lifted. By a peculiar electric lighting effect the vapors could be seen passing over the lands. The water was separated from the land and the earth gradually shaped itself.

Then the decorating of the earth began. Trees and shrubbery sprouted up, as if by magic; the sun rose and set; the moon appeared and a dull gray light rested upon the newly made earth.

AWAKENING OF LIFE.

The plant life increases before the gaze of spectators and life is introduced. The lights were modulated so as to fit the scenes and in time one saw the moon go down and the darkness of night rest upon the universe.

The trees and plants of the earth disappeared, the clouds vanished, and when the audience awakened from its dream the great doors of the amphitheater were found open and the spectators discovered that they had not been living in a forgotten age, but that they were in the Twentieth Century, in St. Louis and on the Pike.

The music of a great pipe organ lent itself to the enchantment of the scenes and together with the impressive voice of the scriptural reader contributed to an experience not to be soon forgotten.

AN ARTIFICIAL WHIRLPOOL.

Probably nowhere else in the world could be seen an aquatic marvel equal to the Magic Whirlpool on the Pike. Ed. M. Bayliss, a noted showman, has outrivaled nature in the production of an artificial maelstrom at a cost of nearly \$100,000.

The famed Charybdis of Ulysses' day and the terrifying sea-giants off the coast of Norway are as painted toys compared to the creation of Mr. Bayliss, for the Magic Whirlpool of the St. Louis Exposition was elevated 60 feet in the air. It came apparently from nowhere and swirled with terrific roar at the feet of the spectator. Women and children entered the maelstrom, disappeared and returned again utterly unharmed and eager to repeat the experience.

All the accompaniments of the most evil disposed whirlpool known to fiction, were there, minus the danger and plus the mystery. Water came tumbling in a silver sheen from an elevation 60 feet high and fell in a circle, around which boats were flying. Boats crowded with passengers entered the swirl and were carried away. They appeared soon at the mouth of the whirlpool and swept round and round on the verge. Suddenly they disappeared only to appear again under the sheen and from thence be borne away to the accompaniment of music into a fairyland of grottoes and fountains and flowers.

Mr. Bayliss has a reputation for mystifying effects with electricity and light. His "Land of the Midnight Sun" was the wonder of the Pan-American exposition at Buffalo, but the Magic Whirlpool transcended them all in mystery and interest. It was a veritable scenic railway.

COST OF THE PRODUCTION.

The water for the whirlpool came from the Mississippi river, 17 miles away. Three powerful centrifugal pumps were employed, throwing 49,000 gallons per minute. Five highpower electric motors furnished the power for the pumps. The building was an ornate structure, occupying a prominent place on the Pike and covering about 50,000 square feet. It contained besides the whirlpool, fountains, grottoes and gardens, 2,700 feet of railroad track and 2,300 feet of water canal. The production cost the management \$90,000 for construction and there was an enormous daily expenditure for maintainance.

The electric current alone cost \$28,000 for the seven months' period of the fair.

"HEREAFTER", -A GRUESOME SHOW.

Visitors to the "Hereafter" on the Pike became for the time being spirits of the world beyond.

This transformation took place immediately on entering through the great arched corridor in the apartment first visited, and known as the Cave of the Dead. A guide to the land of darkness escorted the visitor to the outer or First Circle of Hades. Crossing Acheron, the River of Woe, in Charon's Boat, he visited the Infernal Judge "Minos," dispensing justice to an endless line of wicked spirits.

Further on he partook of the beautiful visions of Faust and then passed on to the Third or Frozen Circle, crossing Stygian Lake into the City of Dis, or Eternal Fires, viewing all about the various punishments of abandoned souls, ever and anon startled by the inexplainable appearance of a frightened spirit, who in its efforts to avoid contaminating mortal contact, occasioned many ludicrous situations. You finally arrived at the great Throne Room and entered the presence of his Satanic Majesty, mingling with his courtiers, skeletons and subordinate devils.

A TOUR OF HELL.

Hereafter was no place for nervous women or children or for ultra sensitive men to visit. During the writer's visit on the opening night, one woman was carried out fainting, and others begged to leave without having to witness the entire show. The whole show is striking and any one that sees it will no doubt remember its weird appearance long after he has passed through its horrors.

DAPHNE'S GROVE.

After leaving the sickening sights illustrating Hell, more pleasant views were disclosed. You now passed through Daphne's Grove, ascending and entering through the gates of Paradise. Spectacular illusion effects unfolded the biblical history of the "Three Wise Men of the Desert." This impressive production, graceful evolutions of a host of ethereal bodies, the dimly discerned and far distant "Star of Bethlehem," ever increasing in brilliancy, and the final culmination, the bursting of Celestial Dawn, intensified by the soft echoing strains of sacred song were depended upon by the management to offset the gruesome introduction to the place.

ANCIENT ROME REVIVED.

Visitors found "Ancient Rome" an educational feature. A few hours within its gates gave the observer much valuable information about the customs and manners of the Romans.

The larger part of the exhibit was illustrative of the Augustine period. Within its gates were men and women dressed in the costumes of slaves, peasants and nobles of that time. Gladiators were lined on each side with hundreds of statues of the most famous senators, statesmen and generals of early Rome. The buildings were reproductions on a small scale of those destroyed by Emperor Nero. Marriage, funeral and like ceremonies were performed in the manner of the ancient Romans. Dancers, acrobats, wire-walkers and trapeze performers furnished abundant amusement.

Within a large amphitheater was seen a reproduction of a Roman hippodrome, twelve chariots and forty-eight horses being used in the races. In a replica of the ancient arena were witnessed contests between gladiators. Giants, clothed in full armor, experts in the use of the broadsword, daily fought in the ring. With their hands inclosed in the cestus, the boxing glove of the Romans, two stalwart men also strove for supremacy. Other Roman games and contests, dancing girls and a presentation of "looping the gap," a bicycle feat, make up the programme.

HALE'S GREAT FIRE EXHIBITION.

A feature well worth seeing was the fire fighting exhibition given by Hale's Firefighters, an organization under command of the former chief of the Kansas City fire department, Hale, whose fire fighting inventions have done much towards rendering life and property safe. The destruction of a tall tenement house was shown, with thrilling rescues and exceedingly interesting drills. The exhibition was calculated to show, and most successfully accomplished its purpose, that the modern fire brigade, while it must be composed of brave and hardy members, depends for its greatest success upon intelligent and unceasing discipline. It matters not how great the spirit of the hero of the flames, if he has not passed through a thorough course of scientific instruction and drill, he is going to fail at some critical time to do the proper thing; but a Hale Firefighter never fails to do the right thing at the right time, and that, almost instinctively.

RAISING BABIES BY INCUBATORS.

In discussing the Pike more than passing mention is due the baby incubator.

Chicken hatching by incubator was known in the time of Ramases, but it has taken centuries to apply the same methods to the raising of babies.

The baby incubator, as demonstrated at the fair, is a nearly square box of silver metal placed about three feet from the floor on four iron supports. It is air-tight, except for the ventilating pipe, which sends into the box a constant stream of filtered air, fresh from the outside. The proper temperature is maintained by the air passing over hot-water pipes placed in the floor of the cage. An exhaust pipe carries away the impure air. A wheel revolving quickly in the inside of the incubator, according to the air exhausted by the tiny lungs, becomes an indicator of the rapidity of the oxygen being consumed in the nest by its occupant.

Suitable apartments were arranged in other parts of the building for the exhibition of unoccupied incubators, where they could be examined in detail by the visitors. This locality was constantly thronged with interested spectators to many of whom the experience was new. The general conclusion was that, for delicate children, the expectation of life would be vastly improved if the parents could take advantage of such a "bringing up."

CHAPTER IX.

SPIRIT OF THE TWENTIETH CENTURY

The Transportation Display at the Fair—Brothers to the Automobile—The Automobile Everywhere in Evidence—A Decisive Innovation—B. & O. Pioneer Display—Transportation, the Life of Civilization—Willard A. Smith, the Department Chief—Laboratory Tests of Locomotives—Old Trains and Old Crews—Complete Electric Railway System—Development of Naval Architecture—Atlantic Passenger Traffic Illustrated—Strategy of American Warfare—Airship Contests.

STANDING right by the Administration entrance, almost the first of the series of principal buildings and all but one the largest of the exposition, the white-walled moss-green-roofed Transportation building gave a fair idea of the stature of the fair and of the lesson it teaches of the progress in the arts and industries since the Columbian exposition at Chicago. Here was spread a collective display of the world's means of travel from the first to the latest, by land, water and air.

BROTHERS TO THE AUTOMOBILE.

Here was the promise of an exhibition of motor cars greater than that of any other single medium of travel and one of the most extensive, most attractive and most progressive displays in the whole grounds. Strangely enough, the occasion was the debut of automobiles at such affairs.

The buggies and the wagons and the boats and the trains had all been at the White City, Chicago. One automobile had been there as a curiosity. Bicycles had been there by the scores and hundreds. Here almost 80,000 square feet were devoted to automobiles. The bicycle was here too in small but respectable array, but equal to it in importance as a collective display was the motor bicycle, proud in the honor of being younger brother to the new king of all the things that go.

THE AUTOMOBILE EVERYWHERE IN EVIDENCE.

No change in the affairs and ways of men could be more noticeable than that marked by this exhibit of means of transportation when it is compared with that which was behind the great gold doorway at Chicago. Even the two exhibitors of bicycles had those with motors above the pedals. Even the exhibitors of boats had those which were the outgrowth of the automobile industry. Even the exhibitors of carriages and wagons had automobiles within the same spaces. Even the exhibitors of harness and saddlery had appurtenances for automobiles. Even the exhibitors of carriage and bicycle lamps and tires made up the greater parts of their exhibits with goods for automobilists. Even the exhibit of railway trains was encroached upon by the automobile railway inspection car.

A DECISIVE INNOVATION.

The Transportation building was the one of all of the divisions of the exposition which presented a decisive innovation in the character of the things which it held. Perhaps only of the whole fair did the wireless telegraph station equal it in the graphic suggestion of a sweeping effect upon the world's work. It was the world's work that the fair depicted. It was in these two phases particularly that a marvelous shifting of methods since the Chicago exposition was broadly noticeable.

B. & O. PIONEER DISPLAY.

The Transportation building was a long, low structure, lying between Machinery hall and the Pike, and with most of its beauty on the outside. Structural iron work having been prohibited by its cost, the building frame work was of wood and the low spreading roof was one great forest of pine. In the center of the floor space stood the street cars, railway trains and the well known and much cherished B. & O. display of the evolution of the railway locomotive.

Flanking this at one end of the building was the exhibit of the carriage and allied trades. Then came the exhibits of American automobile manufacturers. Occupying a corresponding but smaller space on the other side were the transportation displays of European countries. Boats and odd lines completed the show. The bicycle exhibits were in the automobile section, being made by two concerns, one of which made automobiles and motor bicycles, the other being engaged in the manufacture of motor bicycles.

TRANSPORTATION, THE LIFE OF CIVILIZATION.

The importance of transportation in modern life was first properly recognized by the World's Columbian Exposition of 1893, which established a department devoted to this subject. Since that time the example has been followed by all great expositions.

Transportation is the life of modern civilization. It is the circulatory system, without which it could not have come into existence, and the stoppage of which would cause stagnation and decay.

Modern methods of transportation, which have revolutionized the entire world, had their inception after the event, the centennial of which was celebrated by the Louisiana Purchase Exposition. The vast territory purchased by the United States in 1803 is now the heart of the republic. That it has become so rich and powerful, a seat of empire in one country, is due to the railway and steamship and their congenors. In 1803 the means of transportation in the Louisiana Territory were of the crudest kind, principally the flatboat and the pack horse. Today the same territory has 65,000 miles of railway, its rivers are traversed by great fleets, and the telegraph, telephone and trolley wires are weaving a close network over its entire surface. The "unceasing purpose" of progress has had no better exemplification.

WILLARD A. SMITH, THE DEPARTMENT CHIEF.

In charge of this important department was Willard A. Smith, a native of Kenosha, Wis., and a prominent Chicagoan closely identified with railroad publications. Mr. Smith was selected by the railway managers of Chicago for the position of Chief of the Department of Transportation Exhibits of the World's Columbian Exposition of 1893. This was the first department of the kind that had been established at any exposition. The work of planning it and of securing the various exhibits required from all parts of the world required original thought, as there was no early experience to guide in the matter. As is well known, that department was one of the most successful in the exposition, and was the only one which was made a subject of a special volume published by foreign commissioners. Mr. Smith also held the position of Chief of the Department of Transportation and of Engineering with the American Commission to the Paris Exposition of 1900. In connection with this work he was decorated Chevalier of the Legion of Honor by the President of France in 1901.

At the Chicago Exposition and also that of Paris, he was ably assisted by Commander Asher Carter Baker, of the United States Navy, who was also Assistant Chief of the Department at the Louisiana Purchase Exposition.

THE SPIRIT OF THE TWENTIETH CENTURY.

The exhibits in the Palace of Transportation showed the most advanced practice of today in railway building, equipment, maintenance, operation and management, and also the history of the railway as developed during the less than a century of its existence, in all parts of the

world. In order to give "life" to the exhibits the wheels of the locomotives were turned by compressed air. A grand central moving feature was also provided, which was visible from all parts of the building and caught the eyes of the visitor the moment he entered any one of the sixty doors of the vast structure. A steel turntable, elevated some feet above the level of the surface of the surrounding exhibits, carried a mammoth locomotive weighing over 200,000 pounds. The wheels of the locomotive revolved at great speed, while the turntable, revolving slowly by electric power, carried the engine around continuously. Electric headlights on the locomotive and tender threw their searching beams around the entire interior of the building. This moving trophy, emblematic of the great engineering force of civilization, bore the legend, "The Spirit of the Twentieth Century."

Grouped around this central emblem were, on the one hand, a historical presentation by originals and models of the development of the locomotive, the car and the track, from the earliest dream of invention to the wonderful realization of the present day. On the other side appeared the most advanced design and construction—a twentieth century exhibit.

LABORATORY TESTS OF LOCOMOTIVES.

Looking forward to more scientific methods than have yet been adopted anywhere, the Transportation Exhibits Department inaugurated a new departure in exposition work, which attracted world-wide interest. It continued to conduct during the entire term of the Exposition a series of laboratory tests of locomotives, in which all of the most interesting of modern European and American engines were tested for comparative efficiency. The time and place were most fortunate, because foreign and domestic locomotives could be available as at no other time, and because the attendance and assistance of the leading mechanical engineers of the world were assured, thus making the tests truly international in character and an epoch-making event. These tests were made additionally attractive by running a locomotive (or turning its wheels while the locomotive stood still) at the rate of eighty miles an hour, at a certain time each day. This locomotive laboratory constituted a portion of the great exhibit made by the Pennsylvania Railroad System.

OLD TRAINS AND OLD CREWS.

The Baltimore & Ohio Railroad Company also presented a grand retrospective and contemporaneous exhibit of intense interest and vast

educational value. The old locomotives and cars were peopled by figures of the conductors, engineers and firemen of the early days, affording a most picturesque effect. A very large model of the new passenger station at Washington, D. C., was one of the features of this magnificent exhibit, which brought into juxtaposition the embryotic ideas of a century ago and the most advanced practice of today.

COMPLETE ELECTRIC RAILWAY SYSTEM.

The electric railway was represented in this department by cars, tracks, etc.; while the electric motors and appliances were exhibited in the Department of Electricity. Along the northern line of the Transportation Exhibits building, traction systems were shown in operation on a double track, one-quarter of a mile in length.

PASSENGER CARS AND LOCOMOTIVES OF ALL NATIONS.

Two trains of the finest passenger cars ever built by the Pullman Company were shown and these were rivaled by those of other great builders. There were over forty modern locomotives of American, Canadian, French and German construction, including two of the largest locomotives ever built. Every variety of freight construction and work cars was represented; great prominence being given to the most advanced steel construction. Track and structures, together with all the appurtenances and appliances relating thereto, enabled the tyro or the foreigner to study and understand fully American ideas and methods. The State Railways of Germany used a large out-of-doors space for a track exhibit, showing systems of terminals, switches, signals, etc.

DEVELOPMENT OF NAVAL ARCHITECTURE.

Some of the most interesting features of the Department of Transportation Exhibits were found in the Marine section. The models of the famous Bureau Veritas of the Louvre Museum, in Paris, which illustrate the development of naval architecture for the past three centuries, were shown for the first time at any exposition. Also the magnificent boats which form a part of the Armeria, the well-known museum at Madrid. The British Government made a display of a complete collection of models of steamships, men-of-war, etc. There was also a complete set of models illustrating the inland transportation of India.

ATLANTIC PASSENGER TRAFFIC ILLUSTRATED.

The International Mercantile Marine Company occupied a large space,

and made a complete exhibit of models of boats of their line as well as other features illustrating the passenger traffic of the Atlantic.

STRATEGY OF AMERICAN WARFARE.

One of the most interesting features was Dr. Bircher's War Museum, from Aarau, Switzerland, which illustrated by relief maps the strategy of all American wars, both on land and sea. In the American section of the Marine division were full-rigged yachts, boats of all descriptions, and a complete historical exhibit of the water transportation of the Mississippi river; also, a model of the port of New Orleans.

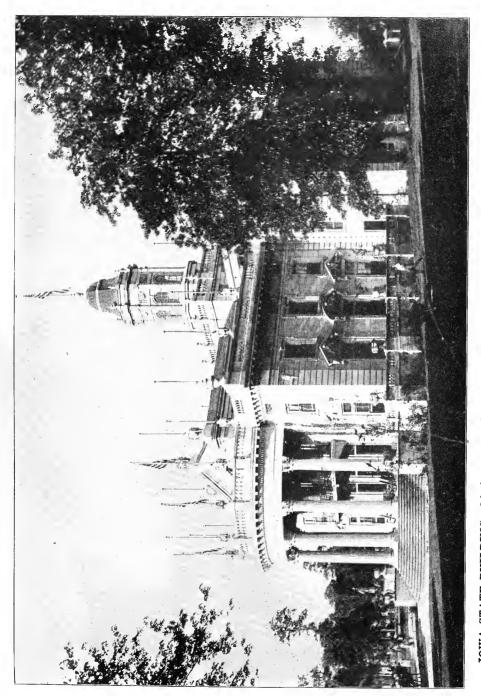
In the German section was shown a model of the port of Hamburg, with the vessels of the North German Lloyd in dock, and an exhibit by the German government of vessels and models, showing the development of naval architecture. Among this collection was displayed a number of models of old battleships of the line, and the earlier vessels used by the Hanseatic League.

The modern methods of transportation in Japan were exhibited in connection with models of her navy yards, docks, men-of-war and merchant vessels.

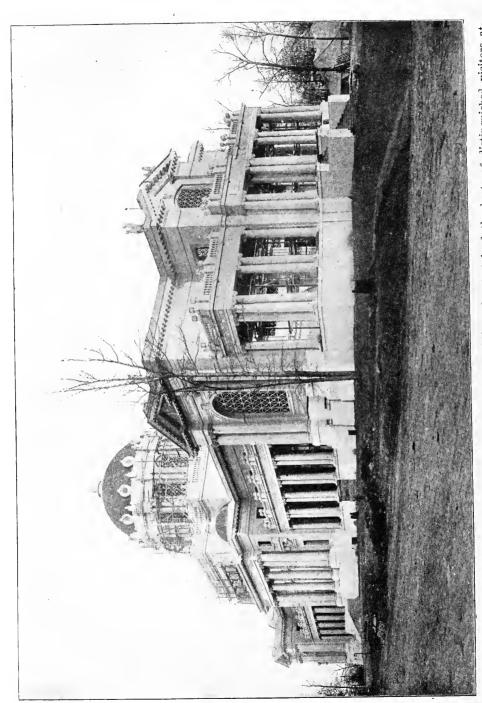
AIRSHIP CONTESTS.

Recognizing the progress made toward solving the problem of aerial navigation, and the possibility, if not the probability, of remarkable achievements in the air, the exposition offered a grand prize of \$100,000 to the airship which should make the best record over a prescribed course, marked by captive balloons, at a speed of not less than twenty miles an hour. Quite a large number of aeronauts announced their intention of competing. There were other prizes for balloon races and contests of various kinds aggregating \$50,000.

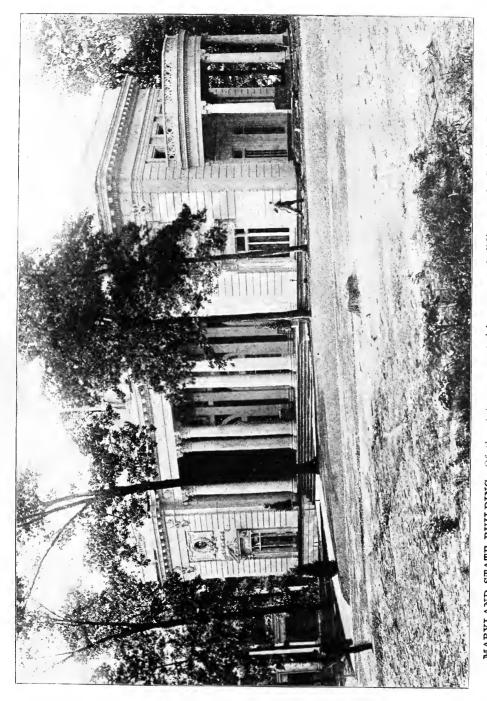
The interest in aeronautics received tremendous impulse from the announcements of this concourse. It was evident that the result would be a great advancement in aerostation, and that this country would henceforth take a leading place in this line of investigation and experiment. The prizes were offered for achievement only; leaving the widest range of methods open to the competition. The amusement attraction feature was entirely ignored, and serious work only encouraged. The rules and regulations formulated by a conference of experts and originally announced withstood world-wide criticism, and received such universal approval that no change was requested.



IOWA STATE BUILDING—Of the great and prosperous agricultural states included in the original Louisiana Purchase, Iowa is in the front rank. Her building was both cheerful and stately, her sons and daughters thoroughly enjoying its broad porticos, its well kept lawns and grounds adorned with tasteful statuary. The Hawkeye State showed that it had truly a sharp eye for the comfort and pleasure of world's fair visitors.



MISSOURI STATE BUILDING—In this imposing structure Missouri entertained the hosts of distinguished visitors attracted to its principal city because of the exposition. The building was just completed when this picture was taken and portions of the staging had not been removed. Few buildings on the ground combined beauty and comfort as this did, and at none was there more open-handed hospitality extended.

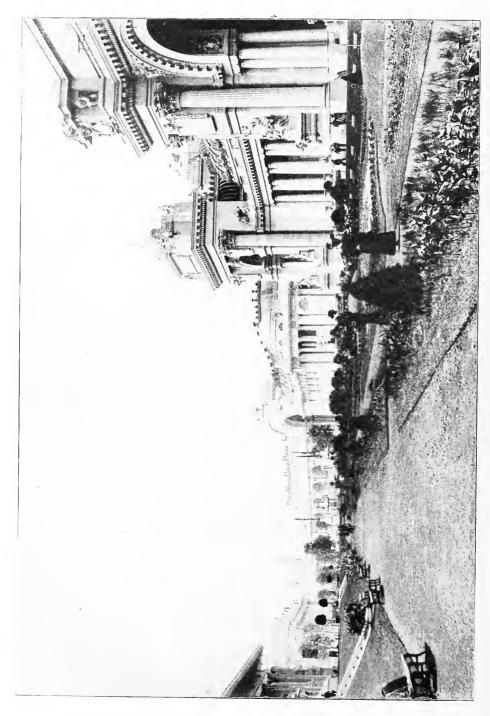


MARYLAND STATE BUILDING—Of the states represented by separate buildings at the Louisiana Purchase Exposition Maryland was among the few who showed an example of the pure colonial style of architecture. The spacious porticos at the main entrance, with their huge supporting pillars, were evidences of the hearty southern welcome which awaited the visitor there. Craceful shade-trees, which threw their cooling shadows all around, added to the general attractiveness of the setting.

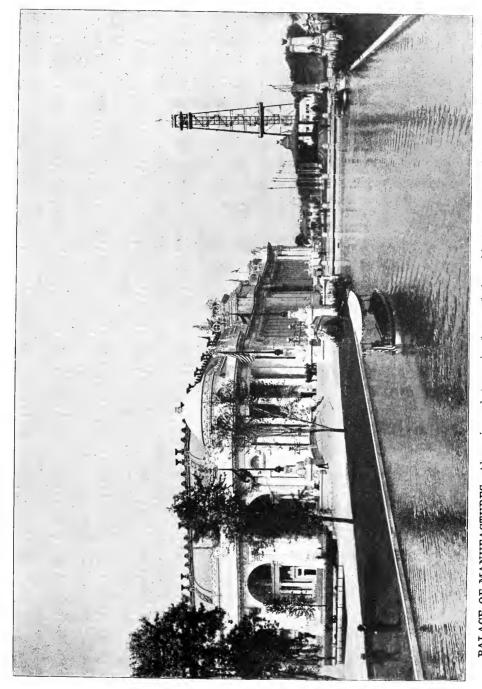




THE PALACE OF TRANSPORTATION—Second in size of the leviathans of the Low splendid structure being accentuated by circular monumental devices, isiana Purchase Exposition, the Palace of Transportation stretched away from the main attracted of the Administration building, its corrugated, moss green roofs forming a soft. Twentieth Contuny and certain it is that outwardly it could not be more appropriately pleasing contrast to its vast white body. Its providence were set off by luge symbolized. Its surroundings of rich, substantial shrubbery and its level, spacious grounds square pillars capped with highly elaborated bell-shaped ornaments, the corners of the were not such as to hide any of its grand proportions.



SUNKEN GARDENS AT THE FAIR—No sight could be more inspiring than the sunken gardens, with their setting of ivory-hued palaces. The ingenuity of the landscape gardener was taxed to its utmost to bring out the delightful effects produced. Throughout the season rare flowers were in constant bloom, filling the air with fragrance.



PALACE OF MANUFACTURES—Above is a photograph of one of the noblest structures of the exposition—the Palace of Manufactures. The point of view is from the lagroon in the Plaza of Orleans, looking almost due north. The Buffalo tower is seen in the distance behind a grand stand, intransment station and other buildings.



MANUFACTURES BUILDING SEEN FROM LAGOON—Here is a view of the great Palace of Manufactures, taken from the lagoon. Lights and shadows, the art of the architect, landscape gardener and sculptor all contribute to the beauty of the picture. It would be difficult to imagine a more impressive and at the same time restful sight.

CHAPTER X.

THE PALACE OF MANUFACTURES

Building Perfectly Ventilated and Lighted—Compared With the Chicago Leviathan—Chief of the Manufactures Exhibit—Vast Labors of the Department—High Standard of Artistic Installation Required—For the Man With Corns—Manufactures or Fine Arts?

—Classification of the Manufactures—Hardware, Heating and Ventilating Apparatus—Great Costume Display—Sculpture of the Manufactures Exhibit.

HE Manufactures building of the Louisiana Purchase Exposition was of Corinthian design and covered an area of fourteen acres. It was one of the main buildings, situated at the entrance to the central boulevard of the exposition and one of the most conspicuous objects seen on entering the main gate. The structure had a frontage to the north of 1,200 feet, with a depth of 525 feet on the main boulevard.

The architects provided imposing entrances at the centers of the main facades and originally planned a tower 400 feet high at the angle of the main elevation facing north. This prominent feature was to be an appropriate balance to a tower of corresponding height on the Varied Industries building immediately west. These two towers were later eliminated.

Corner entrances were also provided for this building. Such entrances are difficult to so design as to be in perfect harmony with the architecture of the building in general. Without skillful treatment they would not be acceptable from an artistic standpoint, but these minor entrances in the Manufactures building pleased both the layman and the expert. Graceful groups of sculpture both ornamented and accentuated the four main entrances on the sides.

BUILDING PERFECTLY VENTILATED AND LIGHTED.

A most skillful arrangement of the sky lines of this building were effected. The roof was so designed as to give perfect light and ventilation and at the same time to avoid the extensive and troublesome skylights frequently used on structures of this size and kind. Each facade of the building presented an open colonnade, which was very acceptable in a climate like that of St. Louis. This afforded a passageway for visitors

and at the same time offered a shadow relief that enhanced the beauty of the design. The interior of the building was laid out with courts of simple and pleasing proportions, with sufficient decoration to relieve the uniformity of the enclosing walls. A scheme of mural decoration was effectively carried out on the outside walls back of the colonnades. The cost of the building was \$850,000.

COMPARED WITH THE CHICAGO LEVIATHAN.

For purposes of comparison the dimensions of the Manufactures building at the World's Columbian Exposition are given. The latter Leviathan, the largest house ever built by the hands of man and therefore one of the wonders of the world, measured within a few feet of 1,700 feet in length and 800 feet wide. It cost just \$1,700,000. The first suggestion that the Manufactures building at the Chicago exposition discounted the building under description is offset when it is explained that about half the manufactured exhibits were located in the Palace of Varied Industries, a heroic structure of similar architecture and proportions. Both came under the same head and when considered together afforded the most extensive space ever given by an exposition to exhibits of this character. High winds were responsible for the abandonment of the lofty twin towers designed to emphasize the relationship of the structures.

CHIEF OF THE MANUFACTURES EXHIBIT.

Milan H. Hulbert was chief of this important department. He is a man of extensive and varied experience in exposition affairs, a native of New York City, where he was born thirty-five years ago. After graduating from the Brooklyn Polytechnic and Collegiate Institute, at the age of seventeen, he entered into business with his father, in the manufacture of firearms and ammunition. As a member of this firm he organized and conducted for the house comprehensive exhibits at the Chicago, Omaha and other expositions, which service having given him a full knowledge of the conditions, advantages and hindrances involved, from the standpoint of an exhibitor as well as of the exposition, well qualified him for the position of an exposition official. Continuing in commerce, he became an officer of his father's firm as well as a director in and adviser of other firearms and sporting goods companies.

In 1899 he was appointed director of the Department of Varied Industries for the United States Commission to the Paris exposition of

1900, and in that position he collected and had charge of the installation and presentation of that magnificent display in the foreign section of the Esplanade des Invalides, which arrested and held the attention and compelled the admiration of every visitor to that exposition, and which opened the eyes of Europe to the excellence and advancement of industrial art in the United States. Although the space granted to the United States in that section was much less than allotted to Germany, England, Austria or Japan, the skill and taste manifested in utilizing the comparatively small area, and the excellent and systematic arrangement and grouping of exhibits, brought the American display into the greatest prominence and caused that section of the Invalides to be considered by everyone the most attractive and inviting spot in any of the foreign sections.

In addition to his duties as Director of Varied Industries, Mr. Hulbert acted for the French government as a member of the Jury of Awards, and for these services, both to his government and that of France, he was decorated with the order of the Legion of Honor, grade of Chevalier.

Mr. Hulbert was selected as Chief of the Department of Manufactures of the Universal Exposition of 1904 on January 15, 1902, and at once entered upon the discharge of his duties.

VAST LABORS OF THE DEPARTMENT OF MANUFACTURES.

Applications for space from the manufacturers of the United States. and the respective foreign nations of the world for eight times the space available in the two palaces of the Department of Manufactures, were filed long before the opening of the fair. Fifty-five per cent of the area in each of these palaces was reserved for domestic exhibits, and this domestic space was applied for four times over. This is not surprising. in view of the fact that the latest census discloses the existence of 512,726 manufacturing and mechanical establishments in the United States, the total annual output of which is valued at over \$13,040,000,000. The capital employed by this myriad of working concerns is over \$9,000,000,000. To answer the questions of those interested members of the five thousand manufacturing concerns, to ascertain their desires, to sift the really important firms from the unimportant, and to keep in touch with those who were preparing their exhibits—to aid and instruct them in ways too numerous to mention, was the work of the Department of Manufactures for months and months preceding the opening, and the index of the correspondence files of the department shows 80,000 names.

Among these many applications were requests for space from every line of industry, and the applicants were asked to submit sketches, descriptions, etc., of their proposed installations, in order that the value of each might be determined educationally, commercially and artistically, the allotments of space being made only to firms that furnished assurance of the best displays from one or another of these standards.

HIGH STANDARD OF ARTISTIC INSTALLATION REQUIRED.

The question of artistic installation is one to which the manufacturers of all countries are devoting unusual attention. At the Chicago exposition it was generally considered sufficient if the goods themselves were installed in a manner answering commercial necessities. Now, however, the public require a higher and more artistic standard, owing to the education they have received, a great part of which has been derived through the attention generally given to the displays in show windows. In the past few years this dressing of show windows has become a profession, and it is not now uncommon for the large department stores to employ a high salaried man and a staff of assistants, whose whole attention is given to the conception of original and attractive installations for the different varieties of merchandise.

If you can imagine a big department store taken from a typical city of each of the world's principal countries, and all combined under one roof, you have a partial idea of what the throngs saw who passed through the Palace of Manufactures.

Dress goods from the world's shops, materials for men's clothing, as well as shoes in all stages of making, from the leather "sides" to the showcase, occupied so much space that the vastness of the industry required to keep man clothed began to dawn on the mind as soon as the building was entered.

Rich silks and satins so costly as to be seldom imported save in finished gowns tempted feminine eyes, as well as dainty fineries from a hundred workshops devised to aid lovers of the art of dressing well.

FOR THE MAN WITH CORNS.

How shoes are made may offer some satisfaction to the man who has corns, for he can watch the tortures to which the leather is subjected in almost automatic machinery before the pair of patent leathers is ready for his feet.

Richly-tanned leathers, plain, stamped, embossed and carved in intricate patterns tell what has been done since the hides of wild beasts were tanned with oak bark in stagnant pools and softened by oils from the fat of their first owners.

MANUFACTURES OR FINE ARTS?

The first impressions received by persons who entered the Palace of Manufactures by the west central entrance was that they have inadvertently strayed into the Palace of Fine Arts.

To the left of the entrance was a forest of 5,000 pieces of the finest marble and alabaster statuary and bronzes from Italy.

"How comes it that these are in the Manufactures building?" is the question which many asked.

The most common supposition, that there was not room in the Fine Arts building, was incorrect. The right answer was that the beautiful objects were in the right place because they were "manufactures," according to the rules under which exposition exhibits are classified.

The figures were works of art, but the artists who created them were in the employ of sculpture firms and the figures are exhibited by the firms, and they were therefore "manufactures."

But for all that, it is doubtful if any section of the Fine Arts Palace attracted greater attention than the exhibit of Italian "manufactures."

Most of it was snowy white and the collection of marbles was so complete that days might be spent in studying the artistic perfection of the exhibit.

A few of the figures were of heroic size, but the greater part of them were notable rather for their daintiness. Nearly all of the pieces were from Florence; a few from Rome.

A feature of romantic interest in the exhibit was a collection of 400 bronzes, exact copies of originals taken from the ruins of Pompeii and Herculaneum. They were all in copper, with silver encrustations.

In many other general features the palaces of the Department of Manufactures differed from previous similar structures, notable among which was the aisle arrangement. All the aisles were of equal width. There was no main aisle, and each avenue was of equal value to the sightseer. The enormous size of the palaces, and the thousands of people passing through each required a systematic arrangement of the aisles in order that exhibits might be easily located. To this end the aisles were laid out on the same

principle as the streets of cities, each having its name, and each exhibit having its number, the same method being applied as that used for city blocks.

CLASSIFICATION OF THE MANUFACTURES.

Broadly speaking, the classification of nine hundred industries in this department, which were covered by two hundred and thirty classes and thirty-two groups of the official classification, included all the goods one would ordinarily find in the following retail stores: Stationery store, artists' supplies shop, hardware store, furniture store, dry goods store, department store, jewelry store, toy store, china and glass store, men's furnishing store, tailor shop, millinery store, rubber store and many others.

To house this large variety of merchandise two of the largest palaces—Manufactures and Varied Industries—covering a total area of twenty-eight acres, were assigned. The exhibits were installed in these palaces in three great classes. In the Palace of Varied Industries was found the merchandise commonly classified as Industrial Art, that which is made to please the eye. In the Palace of Manufactures were presented the other two great subdivisions, consisting wholly of goods utilitarian in nature, in contradistinction to those in Varied Industries.

HARDWARE, HEATING AND VENTILATING APPARATUS.

As before stated, the Palace of Manufactures contained the exhibits of goods of a purely utilitarian nature. These were divided into two divisions, one including hardware, heating and ventilating apparatus, glass, lighting apparatus (other than electrical), undertakers' goods, and a large variety of merchandise in woods and metals, installed in the west half of the building, and the other consisting of the exhibits of textiles, clothing, etc., occupying the eastern half.

The hardware exhibit included everything that could possibly be classed under that heading, and probably the most effective installations in this section were the displays of cutlery. These were interesting and valuable, and showed the processes of manufacture from the rough metal up to the grinding and polishing. The most extensive variety of table cutlery was shown, as well as pocket cutlery, scissors, razors and knives.

Following the hardware section was that which presented heating and ventilating apparatus, including extensive exhibits of radiators, low pressure boilers, stoves, furnaces, etc., as well as every variety of ventilating appliances and systems. Adjoining this was shown all the methods of

lighting other than electrical, and these proved very attractive on account of the beautiful spectacular effects which were presented.

GREAT COSTUME DISPLAY.

Turning from the utilitarian division to the eastern half of the building the visitor encountered the most complete exhibit of costumes which had ever been attempted at any exposition, one of its most interesting and popular features being the show room, where the gowns were exhibited on live models, in addition to the regular installation on wax figures in the cases. Adjoining this there was an effective display of individual work, such as embroidery, lace-making and needle work of all kinds.

FOREIGN DISPLAY COMPARED WITH PARIS EXPOSITION.

The Department of Manufactures was especially notable for its representative foreign exhibits. In this respect it far surpassed the great exhibit in the Palace of Industries at the Paris exposition in 1900, which latter has been acknowledged superior to anything that had previously been accomplished at international expositions.

The Paris Palace of Industries was 1,200 feet long and 160 feet wide, less than half the size of either of the palaces devoted to similar exhibits at St. Louis. Its contents were so well installed and displayed, and of such attractive interest that this section proved the most popular of the entire exposition. The exhibits of France, United States, England, Germany, Italy, Austria and Japan stood out prominently; each had an excellent exhibit of its special products of manufactures at St. Louis. And in addition there were pleasing exhibits from Holland, Denmark, India, Persia, Norway, Sweden, Switzerland, Turkey and many others. Germany, whose exhibit at Paris was by far the best display of Industrial Arts that nation had ever made, had in the Palace of Varied Industries at St. Louis, a much more extensive and elaborate exhibit.

France had installed in the Palace of Manufactures the most important and representative display that that country ever made in a foreign land. The exhibits of Italy and Austria approached those of Germany and France, while the displays of Japan and also of China were distinguishing features of unusual interest.

SCULPTURE OF THE MANUFACTURES BUILDING.

It would be unfair to pass by the sculpture that adorned this great building without commenting thereon. For the court of the Palace of Manufactures, Philip Martini did two marine fountains, one a "Neptune," with trident and chariot drawn by sea horses, the other a "Venus," with spear and attendant horses and chariot. "Victory" over the main entrance attracted attention, in view of the fact that the sculptor, Michael Tonetti, employed an electric fan to produce the effect of the wind-blown garments on the partly draped figure. The heroic horse groups on this structure were executed by L. O. Lawrie. Isadore Konti supplied allegorical figures illustrating the "Progress of Manufactures." Tonetti did the portrait statue of "Charles Goodyear." Max Mauch contributed the portrait statue of "John Gobelin." G. T. Brewster modeled two spandrels, and L. L. Ameteis contributed two figures for the roof line, all magnificent examples of art.

The statues of Goodyear and Gobelin well illustrated the scope of the exhibits within. There was Goodyear, a modern inventor and manufacturer of goods to stand the hard rubs of the world, representative of the practical spirit of the day which is looking about to supply those things which the mass of the people must use. On the other hand, there is a limited craving for the things that are artistic and a more limited ability to satisfy that craving. Such works of art as Gobelin tapestries can be enjoyed by few, and the very fact that a statue of their original creator should adorn this palace shows how faint is the dividing line between Manufactures and Art.

CHAPTER XI.

PALACE OF VARIED INDUSTRIES

Grand Entrance and Interior Court—Commercial and Household Furnishings—The Domestic Exhibits—Industrial Art for Children—Great Floral Clock, Electrically Illuminated—The Decorative Sculpture.

LTHOUGH separated from the Palace of Manufactures by the Plaza of St. Louis, the huge building devoted to Varied Industries in reality formed a part of it and was merely a division of the same department. In passing from one to the other the visitor was greeted with his first view of the main vista of the Lagoons, Gardens, Cascades, Terrace of States and Festival Hall. It was designed in symmetry with the Palace of Manufactures, together with which it provided space for the exhibits of this department. It was the first building let to contractors.

GRAND ENTRANCE AND INTERIOR COURT.

Because of the importance of its location, the general plan of this Palace provided for an elaborate treatment of the four facades to meet the requirements of its position on the main picture. The facade on the main avenue at the south was its most striking feature, being provided with an elaborate entrance thrown back behind a circular portico of columns of increased size. An ornate dome capped the portico. A magnificent corridor passed through the building from its entrance, leading at the center into a fine interior court, with exhibits housed in kiosks and iron pavilions. There were numerous supplemental entrances provided at the center of the facades, and at the corners a colonnade on the east and west fronts enhanced the beauty of the structure.

The style of the building was Renaissance, with a fine and liberal use of the Ionic column. In proportions it was an exact duplicate of the Manufactures building.

COMMERCIAL AND HOUSEHOLD FURNISHINGS.

Among the industrial art displays in the Palace of Varied Industries were most interesting and comprehensive exhibits of furniture and interior decoration, the former including, not only the ordinary exhibits of furniture, but what is known as "Commercial Furniture," shown by the latest filing cases, time-saving business devices and up-to-date office fixtures and furnishings.

Under interior decoration was shown a grouping of the industries which tend to make "The House Beautiful," consisting of displays of all articles, features and details of interior decoration, such as upholstery, tapestries, stained and painted glass, etc.

THE DOMESTIC EXHIBITS.

A concrete idea of just what was contained may be gathered from a review of the classifications governing the Domestic exhibits. These are shown under the following heads.

Interior Decoration (DeLuxe).

General Interior Decoration and Furniture (tables, beds, chairs, etc.). Special Furniture (store fixtures, bar fixtures, billiard tables, etc.).

Leaded Glass.

Silver and Gold Ware.

Jewelry.

Fancy Articles.

Clocks, Watches, etc.

Art Bronzes.

Art Pottery.

Art Glass, etc.

The collection of ceramics, pure porcelains, unique pottery, etc., was very attractive. Japan and China offered specimens in this exhibit, which were the finest ever sent abroad for that purpose. England, France, Holland and Germany, as well as the United States, were represented in this display by the finest products of their artists and kilns.

Japan had \$625,000 appropriated by its government for a magnificent representation and provided an unsurpassed display of those products of industrial arts for which that country has such a high reputation; bronzes, porcelain, pottery, carved wood and ivory, lacquer work, embroideries, silks, etc.

INDUSTRIAL ART FOR CHILDREN.

Included under Industrial Art for children were the exhibits of toys. Germany and France, vieing with the United States, have arrived at a remarkable perfection in the production of all varieties of toys. The

manufacturers of today are paying special attention to the artistic forms of their creations, and each of the above-mentioned countries showed its most improved specimens.

In the artistic designing of booths the exhibitors in this Palace excelled those in the other palaces and the big building offered the appearance of a complete exposition in itself.

GREAT FLORAL CLOCK, ELECTRICALLY ILLUMINATED.

In addition to an extensive display of clocks in the exhibit palace proper, one of the most novel features of the exposition was the floral clock built on Agricultural Hill, for which this department furnished the mechanism. This consisted of a dial 100 feet in diameter, the numerals on which were approximately 15 feet high, and made entirely of flowers. At the top of the dial there was a small house built to contain the mechanism, and near by a 5,000 pound bell, whose tones could be heard throughout the grounds, and a mammoth hour glass exposed to view. This bell struck the hour and half hour, and upon the first stroke of each hour, the immense hour glass turned and the sand run back. At the same time the doors of the house swung open, exposing the mechanism which controlled the striking and operated the dial, closing immediately upon the last stroke of the bell. At night the clock was brilliantly illuminated. Some 1,000 electric lamps were required for this purpose.

THE DECORATIVE SCULPTURE.

Returning to the building proper, not the least of its exterior charm was contributed by sculpture. "Industry of Man" and "Industry of Woman," striking examples on the east front, were the work of Antonin C. Skodik. Nine repeated figures of a "Torchbearer," by Bruno L. Zimm, stood on the entablature of the swinging colonnade. Spandrels on the corner pavilions and spandrels for the west entrance were done respectively by William W. Manatt and Peter Roasak. A tympanum behind the swinging colonnade was the work of Douglas Tilden, California's mute sculptor. Another tympanum, by Clement J. Barnthorn, decorated the east entrance. The four groups for the east and west fronts were contributed by John Flanagan, the decorative sculpture as a whole suggesting the personal nature of the exhibit.

THE DOMINANT FEATURE OF THE EXHIBIT.

In admiring the thousands of articles so eloquent of beauty and art displayed in the Palace of Varied Industries the visitor was most forcibly

impressed with the atmosphere of individuality which surrounded them. Pottery, glassware, bronze figures, fancy articles of wearing apparel, beautiful watches, superb jewelry, everything which might be accessory to the lives of the wealthy or the refined, were there. Elegant and massive fixtures and appliances for the office, the store and the factory, were also displayed. The department was an epitome of the Home Beautiful and the most modern conveniences and luxuries of the business world.

The articles themselves, also, although largely the product of machinery, were such as represented the intelligence, skill and artistic taste of the individual, as, for instance, the wonders in bronzes and pottery, jewelry, interior decorations and household furnishings. Japan carried away a lion's share of the honors in this special field. The large part played by the child in the American life was also evidenced by the many artistic displays devoted to its sole amusement. The department of Varied Industries was, in a word, an exposition of delicate, artistic domestic manufactures, and will long be remembered as one of the charms of the exposition; for while the industries there were as varied almost as individual tastes, they presented the aspect of a beautiful piece of woven goods, or a selection from one of the musical masters, with a dominant idea or theme running through the entire work.

CHAPTER XII.

MINING AND METALLURGICAL PALACE

Why Obelisks Before this Palace?—Development of Brick-Making—Joseph A. Holmes, Chief of the Department—Typical of Louisiana Purchase Development—Archway of Pennsylvania Coal—Exhibit of Bethlehem Steel Company's Rolling Mills—Indiana and West Virginia Coal Exhibits—Gigantic Cast-Iron Statue of Vulcan—Greatest Exhibit Space of All Expositions—Workings of an Anthracite Mine—Profitable Handling of Low-Grade Ores—New Mexican Turquoise Mines—Mining Gulch and the Cement Building—Gold Mill in Operation.

OING a-mining was one of the enticing possibilities of the Louisiana Purchase Exposition. The advantages of mining after this fashion are legion. Coal, oil, copper, silver, gold, or even radium can be discovered, all within a comparatively limited space. The prospector strikes "pay-dirt"—in the sense of something of interest—before traveling far. The extreme limit of his operations at the world's fair were confined to the Mines and Metallurgy building and to the "Mining Gulch."

WHY OBELISKS BEFORE THIS PALACE?

The Palace of Mines and Metallurgy was one of the most remarkable structures at the fair. It was designed in L'art Nouveau, or Secession, as architects term the style. Close by was "Mining Gulch." A suggestion of orientalism clung to the building, due largely to the presence of huge obelisks at the entrance.

"What are those obelisks doing in front of the Palace of Mines and Metallurgy?" was asked by scores of visitors when they saw the building for the first time.

Inside, the exhibit showing the development of the brick-making industry from the time it was employed by Egypt to the present day, gave the answer.

EVELOPMENT OF BRICK-MAKING.

The various clays, varying in quality from the common earth used in making chimney brick to the delicate porcelain, the machinery used in transforming them into useful and ornamental objects and the finished products themselves were enough to give anyone a wholesome respect for dirt, provided it is dirt that can be baked.

Covered promenades surrounded the grand building with its deepset walls, sculptured panels illustrating mining processes, splendid statuary ornamentation and Egyptian, Byzantine and Greek characteristics.

JOSEPH A. HOLMES, CHIEF OF THE DEPARTMENT.

Over this important division of the fair Joseph A. Holmes presided as Chief of the Department of Mines and Metallurgy. He is a native of South Carolina, a graduate of Cornell University, and a man of broad professional culture and practical experience. For ten years he was professor of Geology and Mineralogy in the University of North Carolina, and State Geologist of North Carolina. Since the year 1891, he has been officially connected with State and Government surveys and an active promoter of national interests. In the course of this work for the Government he has visited and carefully examined the mineral and ore deposits in practically all the states and territories of the Union.

With these general attainments Mr. Holmes entered upon his special duties at St. Louis, being equipped by a previous experience in the installation of mining exhibits at the Atlanta, New Orleans and Chicago expositions, and having served as a juror at the Omaha, Buffalo, Atlanta, Nashville and Charleston expositions. He is a member of the American Institute of Mining Engineers, the American Geological Society, the American Association for the Advancement of Science, the Washington Academy of Science, and other scientific societies. In addition to his practical services, he has been a frequent contributor to scientific and mining journals, treating, both technically and in a popular form, many subjects allied to those which engaged the attention of visitors to the Mining Department of the Louisiana Purchase Exposition.

TYPICAL OF LOUISIANA PURCHASE DEVELOPMENT.

In a segregation of departments illustrating the progress and attainments of the last century in the United States, it would be in bad taste to designate one field of labor as more worthy of consideration than another. It may safely be affirmed, however, that so far as the modernizing and general development of the Louisiana Purchase area is concerned, no advance has been more marked than that in the department of mining and its collateral branches. Hence, the Palace of Mines and

Metallurgy may be safely regarded as especially typical of the development of the Louisiana Purchase states, agriculture naturally coming in a good second, with not a few advocates claiming for it the first place.

In any brief notice of the Department of Mines and Metallurgy, one must necessarily admit his observations to features not only distinctive, but necessarily novel and attractive. Although in the Department of Mining alone the western states deserve and have received conspicuous recognition, yet as largely identified with this industry, as well as of the industry of metallurgy, which represents the consummation of labor in this department, the eastern states must necessarily be fully and freely represented.

ARCHWAY OF PENNSYLVANIA COAL.

In the Palace of Mines and Metallurgy, recognizing the fact that coal was king, especial space and emphasis were given to the coal mines and coal-bearing areas. With this in view, such states as Pennsylvania, Wyoming, Indiana and others necessarily claimed special recognition, and this recognition was given in a most attractive way. For instance, the state of Pennsylvania erected over the main entrance of her exhibit an archway composed entirely of coal over 20 feet in height, and of a design that in spite of the refractory character of the material was recognized as artistic to a degree.

Pennsylvania, in addition to furnishing the arch, supplemented the leading entrance by two side openings, emphasized by cement and stone columns and balustrades of graceful design and varied materials. This state also gave additional force to its leading industry by presenting a relief map of the mining regions in and about the great central mining and manufacturing district of Pittsburg.

EXHIBIT OF BETHLEHEM STEEL COMPANY'S ROLLING MILLS

From this same commonwealth also came an exhibit made by the Bethlehem Steel Company, in which was found the products of the great rolling mills, arms manufactory, armor plate, etc., that have given to that establishment world-wide fame. Here was installed a 12-inch battleship turret, with guns mounted and in place and surrounded by finished pieces of field artillery and other manufactured products illustrating the advance of the metallurgical processes from the ore, limestone, ganister and other crude materials, through the pig-iron furnace and

Bessemer converters into the rude ingot, the rolled plate and finally the finished product.

INDIANA AND WEST VIRGINIA COAL EXHIBITS.

The same may be said of the exhibit from Indiana. On a space of 26x26 feet in area there was erected a circular tower of medieval design, 33 feet in height and pierced by windows, which in turn were occupied by numerous photographic transparencies illustrating the districts and mines identified with this particular region. This medieval tower was surrounded by high walls of like materials, and the whole constituted a very attractive, artistic and scenic exhibit, at the same time illustrating the purposes it was designed to emphasize.

West Virginia was represented in many ways. Among these were a working model, 30x30 feet, of a West Virginia coal mine; a complete exploitation by models and maps of the coal mining industry; a statistical column 18 feet in height, showing the total coal production of the United States from the origin of the industry to the present date. In furtherance of this same purpose, a coal column 100 feet high was erected and on this was illustrated the thickness and character of a whole series of West Virginia coal veins.

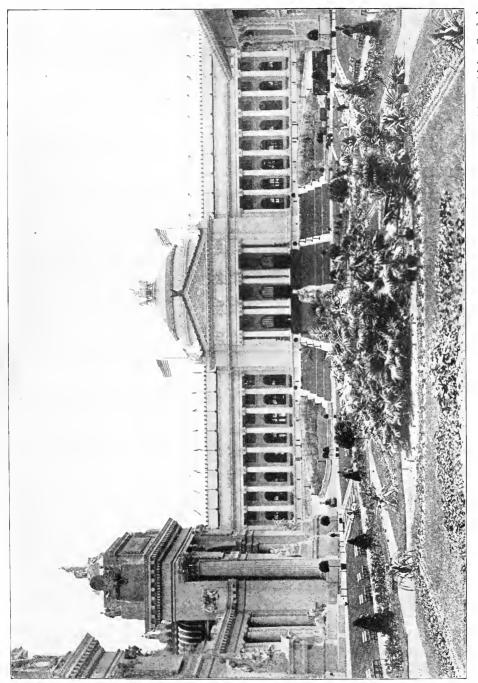
GIGANTIC CAST-IRON STATUE OF VULCAN.

Allied to coal, and second only to it in value as a mineral product, iron, both in the ore and in its several forms, necessarily must command attention. Here, in addition to the monumental cast-iron statue of Vulcan over 50 feet in height, was exhibited iron and steel in commercial forms and of an exceptional character. A flanged iron and dished boiler plate over 11 feet in outside diameter; a second flanged boiler plate 11 feet 6 inches in diameter; a rolled sheet 50 feet long, and other achievements of the metallurgical process were shown to their best advantage and emphasized in a degree that surprised those previously uninformed.

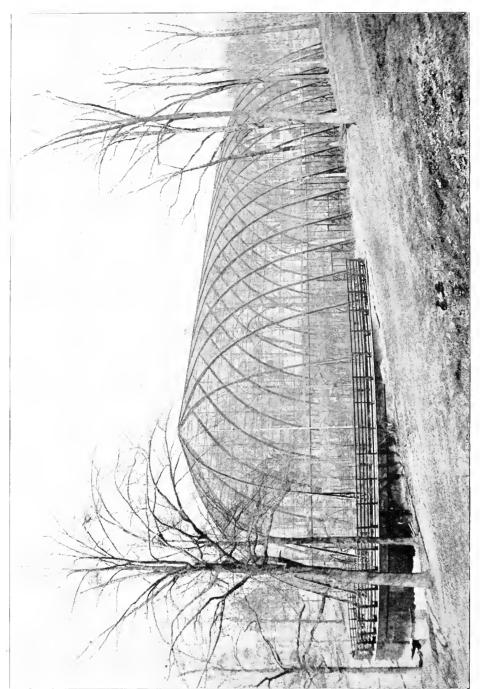
Not only did eastern states contribute to these two special exhibits, but Colorado was in the field, illustrating in its variety of coals and in the full range of its metallurgical processes the progress which coal mining and metallurgy have made in the center of the Louisiana Purchase area.

GREATEST EXHIBIT SPACE OF ALL EXPOSITIONS.

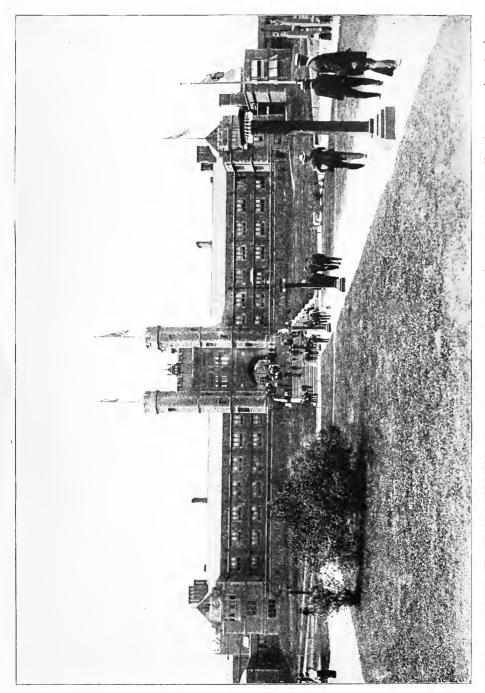
Recognizing that mines and agriculture are the fundamental sources of supply for the world's needs, and that until the date of the Louisiana



GRAND VIEW FROM THE SUNKEN GARDENS—There were few points of vantage at the exposition which afforded more imposing views of the fair buildings than the Sunken Gardens. The view here given shows the broad, elegant front of the Government building, approached by massive stairways and its main entrance appropriately decked by the stars and stripes and the American Eagle. To the left is seen a richly decorated entrance to the Liberal Arts building.

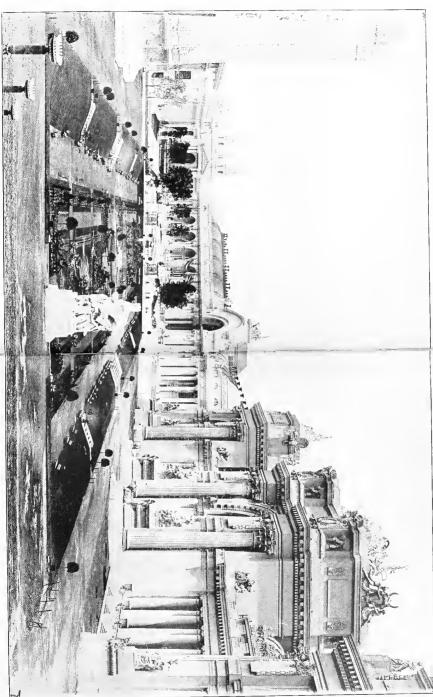


MAMMOTH AVIARY AT THE FAIR—In this buge eage birds of many varieties are exhibited, living amid the environment nature designed for them. It is doubtful if another such exhibit can be found anywhere. In the completeness of its appointments and the variety of the feathered creatures displayed, it constitutes one of the most entertaining features of the exposition and a never ending source of interest to lovers of birds.



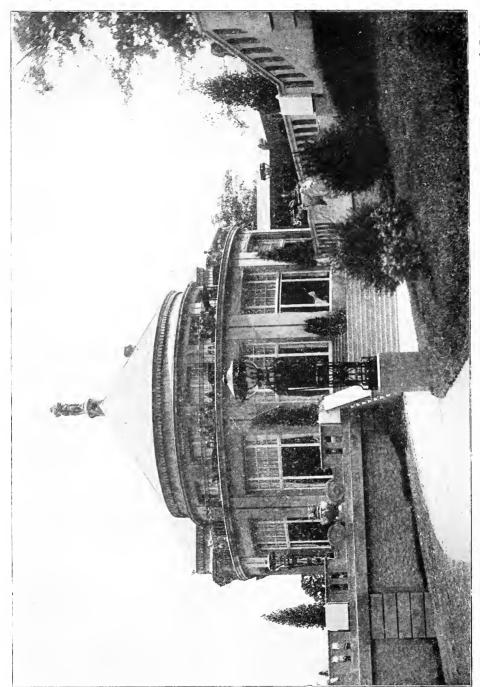
THE ADMINISTRATION BUILDING—This structure, with its main front flanked by medieval towers, its simple entrance and general business-like aspect, was one of the permanent buildings of the Washington University, and was leased to the Louisiana Purchase Exposition for the term of the fair. It was found to be admirably adapted for administering the multitudinous affairs of the great exposition and was one of the husiest centers of the world's fair.



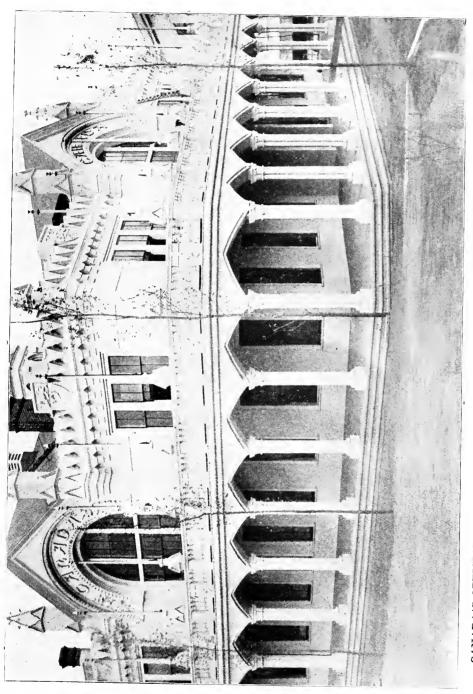


RICH ENAMEL, SET 'ROUND WITH GEMS—The Sunken Gardens of the Lonisiana Purchase Exposition, with their broad borders of green and central beds of varied colors, resembled a grand piece of enamel work set into a broad expanse of grounds and set broad with glistening architectural gems. In the imposing view before us is seen to the left the Palace of Mining and Metallargy, with the two obelisks before the outrance. Opposite and

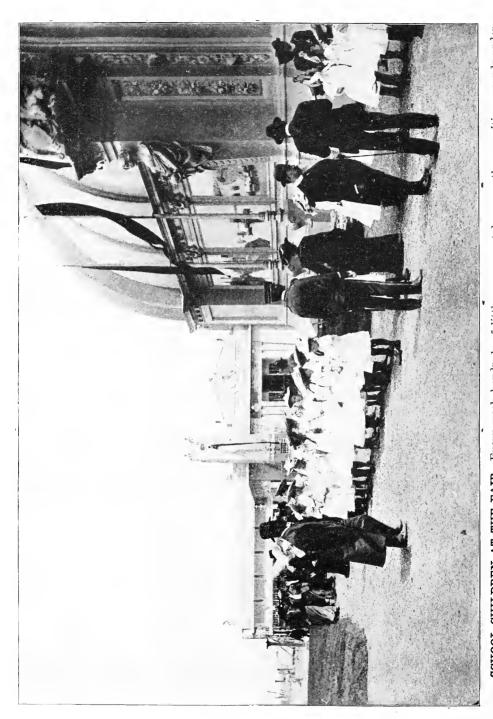
in splendid contrast to its plain, solid style, is the richly ornamented perspective of the Palace of Liberal Arts. The great Palace of Manufactures appears in the distance, while the grandeur of the general view is softened, in detail, by the beautiful statuary which nor only covers the pillared fronts of the white palaces, but is thickly scattered over this entraneing portion of the Exposition grounds.



A GERMAN CORNER—This promenade was immediately before the German building adjoining the Terrace of States. The rounding building shown was a wing of the main structure devoted to a dining hall. Rare wines of ancient vintage and costly delicatessen from the Fatherland were served in almost endless variety and at startling prices.



CANADA'S OFFICIAL HEADQUARTERS—Located in the very heart of one of the most interesting sections of the exposition, Canada put up this clubbouse, for the comfort of visiting Canadians and the extension of hospitality to others. The broad porches invited constant occupancy because of the many absorbing views they commanded and good cheer always prevailed.



SCHOOL CHILDREN AT THE FAIR—Every week hundreds of little ones were taken over the exposition grounds under the guidance of their teachers, in order to derive fully the educational possibilities of the Louisiana Purchase Exposition. This typical scene was taken at the north entrance of the Belgium building and gives some idea of the enjoyment of such exeursions. Purchase, mining was but little known in the United States, the directors of the Louisiana Purchase Exposition Company were most liberal in their appropriations for the Department of Mines and Metallurgy. The building prepared for exhibits of this character far surpassed anything of the kind ever before provided for a like purpose. It covered an area of nine acres (525x750 feet), and cost approximately \$500,000. As in other buildings of this exposition—a fact which should be strongly emphasized—all of the space was floor space. Notwithstanding this fact the exhibit space was greatly in excess of the space, both gallery and floor, heretofore provided at any exposition.

PROCESSES AND PRODUCTS BOTH SHOWN.

The great aim of the exposition authorities was to show in the great palaces for exhibits at St. Louis not alone products and results, but the processes and stages through which the products pass in order that they may become a benefit to mankind. The exhibits in the Palace for Mines and Metallurgy were divided into five great groups, and these in turn into fifty-three classes, which covered all the stages of mining from the preliminary prospecting and surveys down to the manufacture of mine products into the articles of public and general utility. Wherever it was possible so to do, these processes were shown in actual operation.

WORKINGS OF AN ANTHRACITE MINE ILLUSTRATED.

There was an anthracite mine, for instance, in Pennsylvania's space. Out of the base of a miniature hill, from a black little hole which was the miniature shaft mouth, ran a pair of small tracks. Along these, operated by gravity, went the rattling cars. They dived into the black hole, and presently came bobbing out again, scurrying around curves to the base of an incline, up which they were lifted and then dumped into the first separator or breaker.

The breaking was accomplished by what were termed the "main rollers." From the rollers the coal was passed through a series of screens, which allowed the lumps of the desired sizes to drop through. These screens were of several kinds, each being preferred and in use in different districts. Each was illustrated in the one working model.

After screening, the great problem is the elimination of the slate. One device to attain this end involves a double circular chute, down which the coal falls, and the lighter substance flies out from the inner chute and goes down the outer one. Another plan allows the coal and slate to slide down an incline, the bottom of which is a slab of slate. The friction of slate upon slate is greater than of coal upon slate; accordingly, the downward move of the slate is slower, and the separation is thus accomplished. Still a third arrangement provides an incline upon a lesser angle, by means of which the slate is picked from the coal as both move slowly down. All of these processes were graphically illustrated.

The slate eliminated, the coal is subjected to a final screening, for which it is again lifted by ascending buckets. Then, in its final and marketable state, it is loaded direct into cars by means of chutes. A plant such as the one shown by Pennsylvania is capable of mining, separating, screening and loading 500 tons of coal a day.

PROFITABLE HANDLING OF LOW-GRADE ORES.

The profitable handling of low-grade ores is the great problem which has been met and solved in large part by the scientific miners of the West. Illustration of the progress made appeared in several of the exhibits made by the Western states. Utah, particularly, demonstrated one phase of the exercise of man's ingenuity in this direction.

From an ore bin at the top of the intricate machine, the rock slid down by means of an automatic feeder into a Gates gyrating crusher. Passing through this the ore appeared in the shape of comparatively small pebbles. Elevated again, it passed over screens, which again greatly decreased the size of the bits which were to go through the further steps of the process.

From the screens the practically powdered ore was put through three classifiers. These were simply three large funnels, from the bottom of which, through a pipe smaller and within the pipe of the funnel itself, a stream of water played upward. The heavier of the powdered substance naturally sinks, though the upward pouring of the water causes the lighter of the material to pass over into the next classifier, and so on to the third.

The heavier particles, of course, contain the metal which it is desired to isolate as nearly as is possible with this method. The lighter material is the worthless part of the rock—"gangue" it is called. From the classifiers here shown the already partially concentrated copper passed in pipes to what were termed the "benches." These, as the name indicates, are simply benches or tables, designed upon a slight incline. Parallel

along them are lines of ridges or corruscations. A shallow flow of water passed over these tables, in direction perpendicular to the corruscations.

The half-concentrated copper, coming from the classifiers, was carried by the water across the table. The light particles were washed over the ridges; the heavier ones, sinking, were retained in the grooves.

This is the final step. The metal then usually is reduced to a copper sulphate, though it may be some other of the simple chemical combinations. The elements of value in the ore have been extracted. The task to be accomplished by the smelter has been greatly simplified and the freight has become a minor factor in the total cost of production.

NEW MEXICAN TURQUOISE MINES.

A turquoise mine, in operation precisely as the work was done three centuries ago, was an interesting feature contributed by New Mexico. Native Mexicans in picturesque leather clothes and broad sombreros were seen breaking the turquoise-bearing rock from the cliffs and, in sacks hung by straps across their foreheads, carrying it up ladders made of notched poles to the Mexican lapidary in a cabin above, where the polishing and grinding which turn out polished jewels were in operation.

Side by side with this ancient mine was another, where modern machinery and modern methods were employed to remove the turquoise and prepare it for market. In this way the progress that has been made in turquoise mining in New Mexico was shown.

Near the modern mine, in a great glass case, the finest rock ever taken from a turquoise mine was shown, with the rich veins of turquoise running through it. The lapidary, at work in his little miner's cabin on the hillside above the mine, explained how the turquoise of commerce is prepared. Unlike other gems, turquoise is never sold in the rough state, as there is little in the appearance of the rock before it is cut and polished to indicate its final value. Some fine-appearing rocks disclose flaws that make what would be sold for \$6 a carat so valueless that the time spent in getting out the rock and cutting it is deemed a total loss. Others that seem off-color in the rough, when polished are of exactly the proper shade to command the highest prices.

Turquoise must not be too deeply blue, nor of a faded color. The most valuable stone is that which is neither dark nor light, but which has that peculiar blue that can only be described as turquoise. In constitution the mineral is a compound of alumina, carrying a very slight fraction

of one per cent of copper. It is the copper that gives it the blue color and on which its value depends.

FOREIGN EXHIBITS OF MINING AND QUARRYING.

Carrying out the purpose of an international exposition, the spaces granted to foreign countries were most liberal, and the exhibits exceeded any previously made by these countries in the Mining Department. Emphasis may be given to the exhibits of France, Germany, Great Britain, Mexico, Brazil, Italy, Canada and Japan. Each of these nations presented the mineral resources and metallurgical product of their countries to the best advantage. Other countries, such as Sweden, Belgium, Argentina, Chile and Peru, illustrated their mining and quarrying industries fully.

Each nation showed its way, and its way with nearly every metal differs from ours. Our ways, also, are very many. They vary in localities to meet special conditions; they vary with the purposes to which the output is to be devoted, and they differ with the several methods that in many instances have been devised to secure an identical end.

Turning to the more technical feature, there was a fully equipped operating assay office conducted by students and efficient experts, as well as a technical and scientific library, a liberal space being allotted to geological maps, charts, models, etc. In addition to these educational and practical features, several states and nations installed in their exhibits certain specially distinctive objects more likely to attract the popular eye, such as the gold quartz of California, the rare copper ores of Arizona, and the tellurides of Colorado, with occasional stone and metal monuments and trophies of artistic merit and industrial significance.

MINING GULCH AND THE CEMENT BUILDING.

Mining Gulch was a shallow ravine, extending south from the Mines and Metallurgy building, and embracing about 13 acres. It was filled with mining and metallurgical exhibits in actual operation. This had a length of about 1,200 feet, with an average width of 400 feet.

At the northeastern end of this ravine and where it widened on the west side was erected the cement building. In this, constructed entirely of cement, were exploited the many methods now in use for the preparation and mixing of cement rocks. To this was added articles illustrating

the uses of cement, and equipment for cement testing. The Cement building was of itself a most important feature of the exhibit.

As an allied industry to that of cement was found a working exhibit illustrating the manipulation of fire and pottery clays, with the continued processes from the rolls and crushers through grinders, mixing pans, and dryers, to the potter's wheel and firing ovens, the artist's studio and the final glazing.

Adjacent to the pottery and cement works were the terminal or dumping bins of a series of aerial wire tramways, which having taken their contents from the sources of supply at the head of the "Gulch," conveyed them at high levels along the entire length of the ravine to be finally deposited or reconveyed to their source automatically by methods in constant and actual practice in many mining districts.

ARTESIAN WELL AND OIL-BORING OUTFITS.

Occupying the intervening spaces between the elevated tramway cables, projected the derricks of several artesian wells and oil-boring outfits in actual operation, together with a full display of tools and other appliances, demonstrating by actual operation all the practical methods of sinking through sand, gravel and rock, the extraction of wedged and broken tools, the application of sand pumps and torpedoes, together with the processes of tubing, and finally of the pumping of the oil with subsequent storage and transportation.

GOLD MILL IN OPERATION.

On the abrupt slopes of the area was an operating gold mill, in which were shown the method of crushing gold ore, and the collection of the metallic contents on plates, followed by the concentration of the tailings and slimes. In continuation of this practical gold mill was another especially designed to demonstrate the use and application of cyanide and other chemical processes in the extraction of gold from tailings that have passed over the plates and concentrating tables.

Further on were exhibited the primitive and picturesque methods of smelting copper ores practiced by Mexican Indians by processes in use when Cortez visited that country. The natives engaged in this work lived on the ground in their tile covered huts and prepared their corn and food in primitive hand-mills, baking their tortillas in still more primitive clay ovens.

As an allied exhibit to the adjoining coal mine there was an electric railway, in which was demonstrated a novel and effective method for the utilization of the third or central rail in the operation of coal mining trains around abrupt curves and over steep grades. The overhead tramways were utilized when needed to convey raw and waste materials to and from the several special points indicated above and in fact they illustrated what is rapidly becoming one of the most economic features in the operation of mines located at otherwise inaccessible points.

GENERAL FEATURES OF THE DEPARTMENT.

The exhibits of this department generally illustrated the great scientific advances made in getting from mother earth her raw minerals and, with the least possible waste, transforming them into such shape that they could be used by the manufacturer. Gold, silver, copper, iron and all the other ores were shown passing through the most modern processes, often in contrast with the ancient methods, until they appeared, freed of all refuse and ready to be transformed into a thousand forms of beauty and utility. Coal, which in combination with the refined products, forms the basis of the manufacturing industries, was also mined according to the most ingenious and economical modern methods. The coal of industry and the coal of the household was very largely in evidence, both the extent and graphic nature of this class of exhibits being especially impressive. If there were any real monarchs in this department they were Coal and Iron.

CHAPTER XIII.

THE PALACE OF LIBERAL ARTS

The Graphic, or Recording Arts—German Public Works—Wonderful Chinese Wood Work—What Latter-Day Photographers Do—Development of the Piano—Largest Organ in the World—A Factory of Sound, Electrically Driven—Five Organs Combined in One—Key Desk Worked by Electric Cable—Organist with Four Hands—Manual and Pedal Departments—Civil and Military Engineering—Solidification of Hydrogen—Germany's Exposition of Printing, Photography and Hygiene—China's Complete, Fantastic Showing—Col. John O. Ockerson, Chief of the Department.

THE place occupied by Liberal Arts in the higher development of mankind was well indicated by the position given it in the arrangement of the different exposition departments. It was one step ahead of Manufactures and one step behind Art. In other words, the Louisiana Purchase Exposition recognized that, while no apt phrase has as yet been coined to comprehensively define "Liberal Arts," the department is nearly related to Manufacture and closely akin to both Science and Art.

The department was housed in the most easterly of the exhibit palaces, a splendid structure covering nine acres. It was within the walls of this building, on April 30 and May 1 and 2, that the ceremonies incident to the dedication of the exposition took place, in the presence of one of the greatest audiences ever assembled in one enclosure west of the Mississippi river, and was graced by the presence of President Roosevelt, former President Cleveland and other distinguished guests.

WEIGHTS AND MEASURES GALORE.

What man has learned in the art of measurement since he surveyed ground by stepping it off, found the weight of an object by holding it in one hand and comparing it with a stone held in the other, and counted on his fingers or with notches on sticks, was vividly shown by an important part of the exhibits in the Palace of Liberal Arts.

Rules, surveyors' instruments, scales and counting machines told part of the story and in endless variety displayed the different branches into which the first principles have grown. From the plain footrule to the surveyor's instruments which call higher mathematics into service when computing distance, the exhibit of linear measurement was complete.

There were scales that would weigh the most slender thread of a spider's web and those that registered in tons; scales balanced on jewels for the most delicate uses of chemists, and scales with huge beams a man could not lift; spring, balance and lever scales, every type and in countless number, placed side by side to tell what has been learned in the art of determining weights.

THE GRAPHIC, OR RECORDING ARTS.

The graphic arts record the achievements that other arts accomplish. Typesetting machines, American and foreign, were in operation, and the automatic production of type, either in solid lines or in single letters, gave no hint of the struggles Guttenberg first had when he cut all his type by hand.

Printing presses formed one of the most complete exhibits in the building. They ranged from machines which print visiting cards to the big newspaper press into one end of which a roll of paper feeds its web, to come out at the other side a neatly folded newspaper. Color presses in operation answered queries of the curious, anxious to learn how magazine sections of Sunday newspapers are made. A popular magazine was printed, the complete operation from paper roll to bound volume, ready for the news stand, being in plain view.

Allied with the printing arts are lithographing and engraving, and thousands saw for the first time at the fair how a photograph is handled in a newspaper office or publishing house, in order to reproduce it on paper. A wall covered with posters that made college men envious was the most striking feature of the lithographic display.

GERMAN PUBLIC WORKS PICTURED.

Painstaking German surveyors had a wonderful series of maps, relief and outline, which attracted those interested in public works. The construction of reservoirs, sewers, parks and streets was covered by photographs, working plans, drawing and miniature models made of the actual materials employed. How a city can be laid out to secure the best sanitary regulations, the most beautiful arrangement of streets and parks, and the greatest possible good to all classes of its inhabitants were all shown. Many tourists who had made a trip to Cologne to see its great cathedral stopped in admiration before the immense map, and just beneath, the beautiful painting of the entire city.

WONDERFUL CHINESE WOOD WORK.

With miniature pagodas the Chinese tell how they have mastered cabinet work and the art of carving. The wood-working accomplishments of the native artists put to shame anything else of the kind shown in the building. Scores of models of quaintly-shaped junks contrasted oddly with the highly polished models of the royal yachts in the German exhibit close by.

Photographs, from snap shots to color pictures which rivaled brilliant oil paintings won the admiration of all who were familiar with a camera's possibilities.

WHAT LATTER-DAY PHOTOGRAPHERS DO.

Dagnerre would have been equally amazed with those unfamiliar with some of the work by latter-day photographers, had he been there to see the photographs which looked as if they had been drawn with a pencil, photographs appearing to have been painted with gray and white pigments on rough canvas, portraits which could not be told from woodengraving first proofs, landscapes with all of their natural colors correctly blended, to say nothing of the pictures presenting studies in light and shading dear to the heart of the artist.

DISPLAY OF MATHEMATICAL AND SCIENTIFIC INSTRUMENTS

The maker of mathematical, philosophical and other scientific instruments has kept pace with the spread of knowledge and the investigation of scientists. The importance of this industry and its leading position were more fully appreciated when the elaborate displays by leading manufacturers were seen by the public. An equatorial telescope weighing 4,000 pounds was one of the most interesting items of this display.

Progress in medicine and surgery were shown by an excellent exhibit of appliances, instruments and apparatus for research in these departments. A complete modern hospital, with all of the accessories and apparatus known to the most advanced surgery was the most prominent feature of this group.

THE DEVELOPMENT OF THE PIANO SHOWN.

The development of the piano from the earliest days of its history to the present time was shown by a leading manufacturer. Especially did this retrospective exhibit show the evolution of the instrument during the past century. The methods used in the manufacture of a piano were indicated by another exhibitor, while the automatic instruments, which have so rapidly developed in the last ten years, were exceedingly well displayed.

There were marvelous exhibits of band instruments, of cunningly wrought and invaluable stringed instruments, of church, chapel and parlor organs, of pianos by the most famous builders of today, and some positive novelties in music-producing instruments.

THE LARGEST ORGAN IN THE WORLD.

In Festival Hall, entered as an exhibit through the Department of Liberal Arts, was the largest organ in the world. It has five manuals and 140 speaking stops, and was itself, in truth, one of the marvels of the exposition. This organ was built by the Murray M. Harris Organ Company, of Los Angeles, California, under the W. B. Fleming patents.

It is an instrument capable of producing 17,179,869,183 distinct tonal effects, a continuous performance that would last 32,600 years if a different one of these combinations were drawn every minute in those centuries of time.

The wonderful impressiveness of its proportions and its overpowering volume of sound are the least of its remarkable achievements in the realm of instrumental music. That its thousands of pipes sound the profoundest depths of the grand passions as easily as the wind stirs the leaves to fairy cadences, is an infinitesimal part of its accomplishments.

Effects never heard outside the grand orchestra until the manufacture of this colossus, place its expressive powers far in advance of other organs. All of the wood instruments of the full band are contained within its vast compass.

A FACTORY OF SOUND, ELECTRICALLY DRIVEN.

Large as a brick block, 62 feet long, 40 feet high and 33 feet wide, and possessing 140 stops, 239 movements and 10,059 pipes, it overshadows the most famous instrument of Christendom. It cost approximately

\$100,000. Only the master musicians may command its marvelous volubility.

Two electric motors, each of 10 horsepower, drive this factory of sound, the construction of which required 100,000 feet of lumber and 115 miles of wire. The metal pipes alone consumed 16,000 pounds of zinc and 9,000 pounds of soft metal; its wooden pipes contain 35,000 feet of California sugar pine.

A PONY CAN PASS THROUGH THE PIPES.

The two pipes drawing the lowest tones are each 32 feet long; two good sized men, side by side, or a small pony, can pass through them. A train of ten cars is needed to transport this monster when it is moved.

OTHER WORLD-FAMED ORGANS.

The only organ in the world that even approaches this one is the immense instrument in the Town Hall at Sydney, New South Wales, the masterpiece of famous English builders. The Australian giant has 128 stops, as compared with the 140 stops of the world's fair champion.

The next organs in rank are those in the cathedral at Riga, Russia, with four manuals and 124 stops; Albert Hall, London, 4 manuals and 109 stops; Garden City, L. I., 4 manuals and 115 stops; Chicago Auditorium, 4 manuals and 111 stops; Leeds Town Hall, England, 4 manuals and 110 stops; Seville, Spain, 3 manuals and 110 stops; St. Sulpice, Paris, 5 manuals and 100 stops; St. George's Hall, Liverpool, 4 manuals and 100 stops, and Ulm Cathedral, 4 manuals and 100 stops.

FIVE ORGANS COMBINED IN ONE.

Five separate organs are combined within this enormous mass of enginery, electrical mechanism and wind pressure; the first or Great Organ; the second, or Choir Organ; the third, or Swell Organ; the fourth, or Solo Organ, and the fifth, or Echo Organ. The Echo Organ alone is 18 feet wide, 17 feet high and 10 feet deep. It has a special bellows, 12 feet long by 4 feet wide, operated by a motor of one and a half horsepower.

Five organs can be automatically played at one time by a double roll self-performing attachment, on a separate console or key desk. This arrangement draws out the tremendous power and beauty of the five organs, a feat utterly beyond the range of human fingers.

KEY DESK WORKED BY ELECTRIC CABLE.

A movable console or key desk, the only one in the United States, serves the organist in playing the great organ. His fingers must command five manuals or key boards, making a flight of five stairs. This console, which is movable, is connected to the organ by an electric cable, 150 feet long. When seated before the instrument, the musician must dominate the five manual stairs, the 140 draw stop knobs, five tremolant draws and 36 couple draws, the 46 push buttons belonging to the adjustable combination system and all the feet levers controlling the expressive powers of the whole organ.

THE ORGANIST WITH FOUR HANDS.

The second or self-playing console is stationary. Through the agency of the stationary key desk the greatest symphony orchestra scores can be played verbatim without having to reduce the scope of the composition to bring it within the range of human fingers. As an illustration of its superhuman compass, it may be said that a full orchestration would call for ten fingers on each hand. The automatic device can perform it just as easily as any smaller number. A double touch used in this connection has never been heard of before, producing effects precisely the same as if the organist had four hands, two of which were playing full harmony scores on one manual while the other two were performing a stately theme on the full organ.

The most sudden changes of tonality are instantly commanded by the double touch. A slightly increased pressure on the keys by the fingers of the virtuoso will add the voices of any stops drawn from the expressive division of the instrument, an addition that can be made to any note or group of notes under the fingers. It is a mechanical expedient obtained in no other existing organ in the United States and in no first-class concert organ in the world.

In its mechanical intricacies, this most marvelous of instruments presents the highest types of organ building. Five swell boxes, enclosing the several organs combined in one instrument required 7,500 feet of sugar pine; five automatic electrical swell engines operate the shutters of these boxes; 5,000 open circuits connect the various parts.

THE ELECTRICAL MECHANISM.

A motor generator supplying the storage batteries was arranged to permit the playing of the organ continuously through the entire period of the exposition. An immense switchboard showed the voltage and strength of the batteries at all times; an ammeter showed the amount of current being used; a polarity indicator told whether the polarity was right, and a pilot lamp indicated to a certain extent the strength of the batteries. There are 1,016 automatic knobs for setting combinations throughout the organ, and the instrument contains 1,300 magnets for both key and draw stop actions.

Five bellows, each measuring 12 feet long by 6 feet wide, are operated by the two ten-horse power motors of 220 volts, and furnish the wind pressure, which is distributed to the 140 speaking stops and 10,059 pipes through wind chests requiring 20,000 feet of lumber in their construction; the bellows and regulators consumed 8,000 feet, and the wind trunks an additional 2,000 feet.

MANUAL AND PEDAL DEPARTMENTS.

The organ consists of two departments, manual and pedal, commanded respectively by the hands and feet of the performer. The manual department, comprised of 110 speaking stops and 8,907 pipes of metal and wood, is controlled by five claviers or key boards of 61 keys each. The five claviers command the five separate divisions or organs. The pedal organ is the largest and most complete in the world. It is provided with all the leading varieties of what is technically known as the imitative and unimitative tones furnishing appropriate basses for all classes of musical combinations. Thirty-six couplers when joined to the keyboard produce 28 different relations. There are eight pedal organ couplers, 11 unison couplers, seven sub-octave couplers and 10 octave couplers—an array of couplers never before approached in any organ.

Thirteen speaking stops in the first sub-division of the Great Organ form the foundation tone of the entire instrument. Its second sub-division, including the three important reed stops, is capable of multiplying the tonal effects tenfold.

THE SWELL ORGAN AND BRASS-WIND DIVISION.

The third or swell organ introduces for the first time the true orchestral element from which the world's fair organ derives its advanced position among the great concert organs. It possesses the flutes, piccolo, clarinet, oboe, corno di bassette fagotto and contragetto, the horn and violin, besides the human voice. Another division of the swell has no counterpart. It contains 1,281 pipes, every one of which is string tone. Nearly all of these pipes are made of pure tin.

The brass-wind division is represented by the solo organ. Here are placed such stops as the orchestral flute, orchestral clarinet, orchestral trumpet, trombone, bass trombone, tuba and bass tuba.

CHEMICAL AND PHARMACEUTICAL LABORATORIES.

Returning to the Palace of Liberal Arts, there were yet many hundreds of undescribed exhibits that commanded the attention of the visitor.

In the report of the twelfth census on the chemical industries of the United States, attention was called to the large amount of capital invested in the business and its rapid development during the ten years from 1890 to 1900. The allotment of space to exhibitors in the group of Chemical and Pharmaceutical Arts is indicative of this rapid progress. A complete chemical laboratory was one feature; another showed how perfumery is made from flowers; yet others displayed the products of the best laboratories of the country.

CIVIL AND MILITARY ENGINEERING ILLUSTRATED.

Civil and military engineering, models, plans and designs of public works and architectural engineering, comprising three groups, with excellent displays by many exhibitors, gave a comprehensive idea of the great work accomplished by the engineers of this country.

Typical of these groups, in the very center of the Liberal Arts Palace, rose a reproduction to scale of the lighthouse at the Southwest Pass of the Mississippi river. At its base, surrounding it on every side, were engineering exhibits and apparatus used by engineers, and in that vicinity were installed various kindred and related exhibits.

A great array of machinery used in preparing good roads and streets, earth handling and rock-crushing machinery of the latest patterns, and new devices for mixing concrete, water purifying machinery, filtration plants, etc., were well displayed.

Out-of-doors, in the space between the Palace of Varied Industries and the Palace of Transportation, were exhibits of steam shovels, pile drivers and wrecking cranes in operation. The crane exhibit was of especial interest to engineers.

In a word, the Liberal Arts Department by its exhibits fulfilled comprehensively the position given it in the exposition exhibit arrangement.

Its mission was not only to interest but to educate, and in every instance where it was possible, the underlying idea of the Louisiana Purchase Exposition, "life and motion," was carried out.

BROAD AND INTERESTING BRITISH EXHIBIT.

The British Kingdom arranged a very complete and comprehensive display of products called for by the Liberal Arts classification. It included a large collective exhibit of specimens of typography and books by the very best English printers and publishers. Photography, now so important a factor in the life of every civilized nation, was represented by an elaborate exhibit, including specimens of historic photographs from Sir Benjamin Stone, M. P., and other important collections.

Especially important and interesting was the exhibit in the realm of chemistry. There were many models, plans and photographs of great engineering public works, including models of light houses, a model of the Assouan dam, and a most interesting exhibit of geographical maps from the Royal Geographical Society, including exhibits by the Palestine, Egyptian and Cretan Exploration Funds, and maps from the Imperial surveys. The British mint showed a most interesting collection of ancient and modern coins, medals and seals.

SOLIDIFICATION OF HYDROGEN BY PROFESSOR DEWAR.

Possibly the most interesting exhibit in the British section was that of Professor Dewar, whose conspicuous achievements in the liquefaction and solidification of hydrogen, and the remarkable results which he has obtained by his experiments are all matters of common knowledge to The Liberal Arts Committee of the Royal Commission arranged a collective exhibit illustrative of the work done in low temperature investigations embracing the recent achievements of that eminent A complete working plant, practically a duplicate of that employed at the Royal Institution, capable of making two liters of liquid hydrogen, was constructed under the superintendence of Professor Dewar in London, and erected at the exposition. Periodical demonstrations were made of the properties of liquid hydrogen and the separation of helium, etc., from gas mixtures; phosphorescence, photographic action, luminosity of radium in liquified hydrogen, electric crystals, direct liquefaction and solidification of air and oxygen, the solidification of hydrogen and the production of the lowest temperature obtained, i. e., -259 degrees Centigrade.

In the space allotted to France in the Department of Liberal Arts, that nation was given ample opportunity for a most generous display and the exhibit in the French section was not only of enormous value but important and interesting.

GERMANY'S EXPOSITION OF PRINTING, PHOTOGRAPHY, HYGIENE, ETC.

The German Empire occupied a generous amount of space in the Palace of Liberal Arts. Especially interesting was the exhibit of printing from the German Imperial Office, and publications of the German book-trade, specimens of artistic photography and numerous geographical maps; models, plans and designs of public works and other evidences of the achievements by famous German engineers in river improvements, canals, etc., which was especially arranged for the Universal Exposition by the Prussian Minister of Public Works. The Imperial Board of Health organized a hygienic exhibition. In the manufacture of paper and chemicals, of scientific instruments, and of artificial textiles, Germany was splendidly represented.

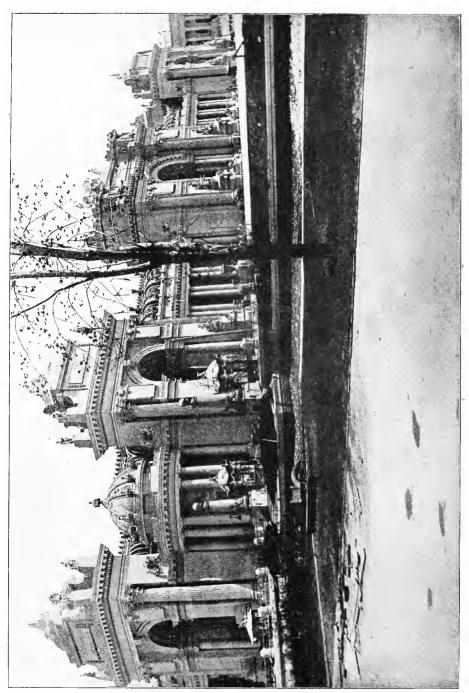
ARGENTINE AND MEXICO WELL REPRESENTED.

Argentine, while not occupying so great a space as any of the foregoing countries, demonstrated by many relief maps, albums of photographs, models of docks and public works, the great improvements which her engineers have made in the rivers and harbors of this most progressive South American country.

Mexico surprised the world by the excellence of her exhibits in typography, chemical production and engineering works, while Italy and Siam presented displays of absorbing interest.

CHINA'S COMPLETE, FANTASTIC SHOWING.

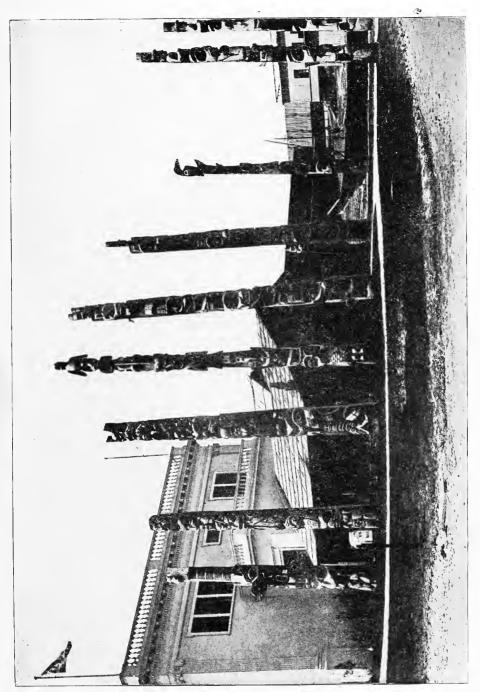
China's principal exhibit was made in this great building. From the nation where printing and the making of books was many hundred years old before Guttenberg discovered his movable types, came specimens of early printing, ancient manuscripts, works of ancient carvers in wood and jade, trophies from her temples and palaces, ancient and fantastic armor and weapons of war old in the days of Confucius and still in use, costumes from widely separated provinces of the Empire, musical instruments strange in shape and weird in tone, together with concrete evidences of China's recent advancement toward closer relationship with



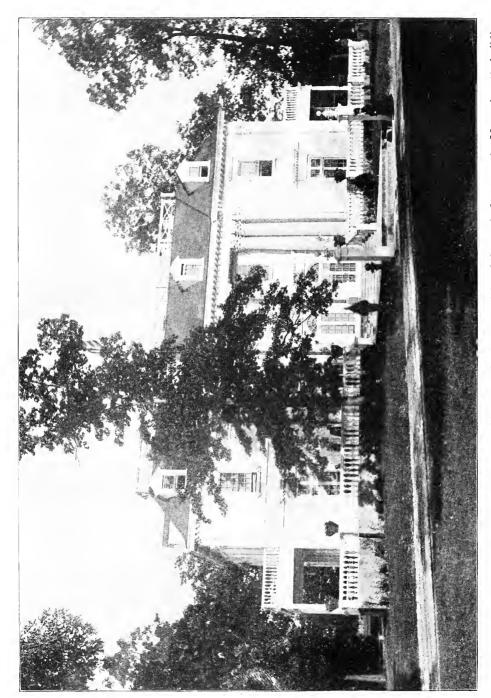
GRAND COLONNADE EFFECT—The chief architectural feature of the Palace of Liberal Arts was the imposing effect produced by the grand arches of the structure, joined by long and lofty colonnades. Above each arch was a massive entablature, surmounted in turn by artistic monumental designs and classic statuary, the corners of the great structure being broken by graceful courts set off by circular colonnades.



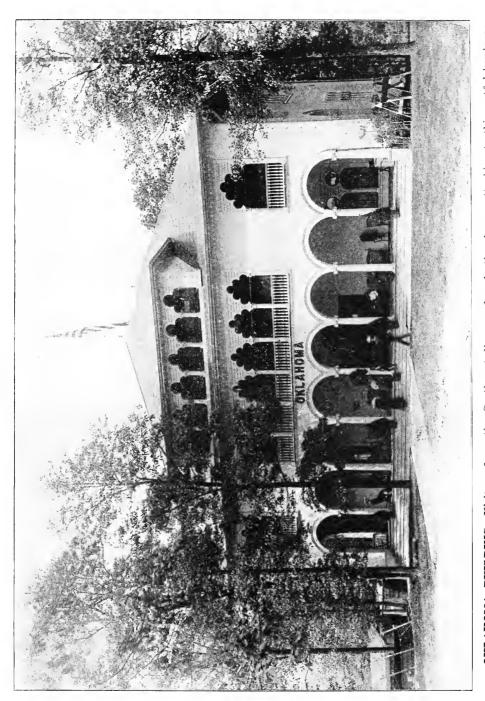
CORNER IN THE ART PALACE—A typical seene in the Art palace is shown in this illustration, displaying the rare work of artists and sculptors, as well as typical plants and products. The statuary in the background represents Jenner in the act of vaccinating a child. Although the corner, at the time the picture was taken, was free of visitors, it often became the favorite meeting place of artistic friends.



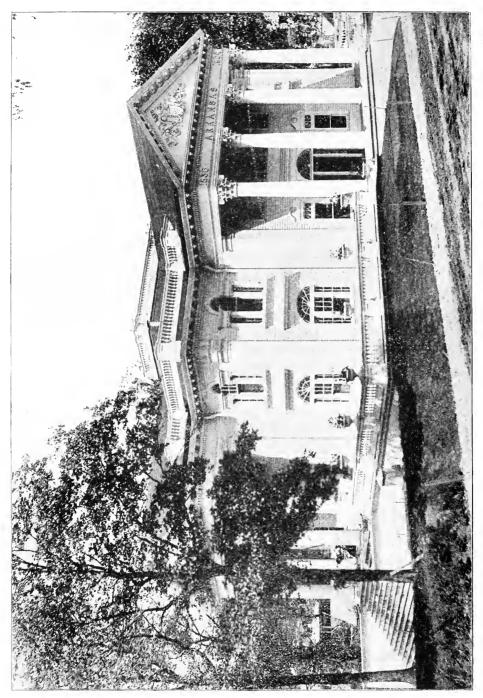
ALASKAN TOTEM POLES—Erected in front of the Alaska buildings was a quaint array of totem poles. The carved figures of bid, beast and man tell the family and tribal history of the Red Men of the North. They are also believed to be used as receptacles for the askes of the dead, and represent, as a whole, a most interesting exhibit of primitive life.



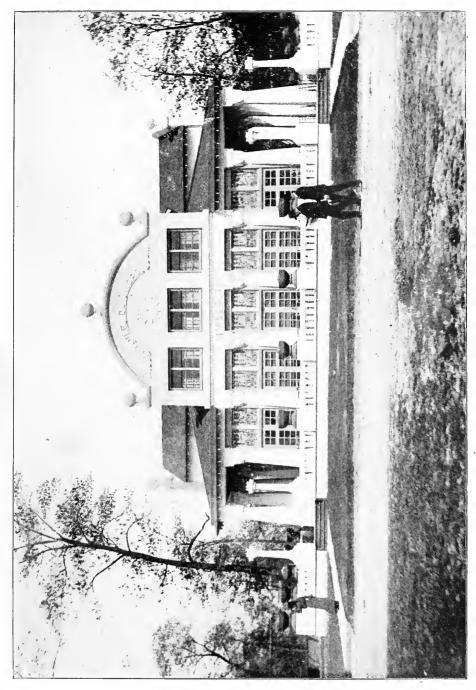
old BAY STATE BUILDING—Set down amid elms and other graceful and dense shade trees, the Massachusetts building seemed a bit of mellow, cultured Boston transferred to the Louisiana Purchase Exposition. The spacious structure was built in old colonial style, with verandas and porticos, supported by square or fluted pillars, on all sides, and dormer windows projecting from the broad railed roof above.



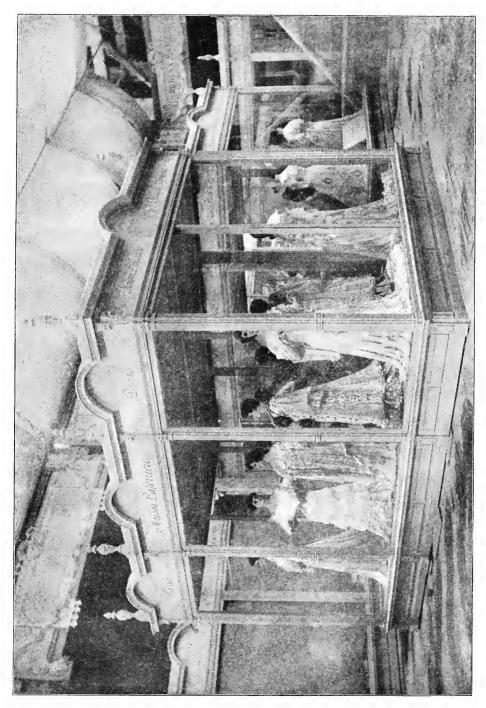
OKLAHOMA BUILDING—Visitors from the Southwest discovered early the charms attaching to this restful headquarters and made it their rendezvous. Great trees and a landscape of natural beauty set off its quiet Moorish beauty. Perhaps no other building on the grounds carried with it such a refreshing atmosphere of repose.



A GLIMPSE OF THE SUNNY SOUTH—This handsome structure was Arkansas' official home at the great Louisiana Purchase Exposition. Its quiet dignity and solid aspect were striking characteristics. Nestling among tall trees and velvety lawns it suggested some splendid plantation home. Arkansas did itself proud in many ways at the fair, particularly in its agricultural exhibits.



MINNESOTA'S UNIQUE WORLD'S FAIR STRUCTURE—This dainty and inviting edifice is the official headquarters of visitors from the state which is world renowned for its cereal, lumber and flour products. The fair is responsible for the awakening of the world to the importance of Minnesota's dairy, agricultural and horticultural products, destined to bring it wealth long after the last stick of timber is cut in the state.



A FEMININE MAGNET IN THE PALACE OF MANUFACTURES—In this illustration is shown a French exhibit of gowns of fabulous cost—one of many displays of similar character and dazzling beauty with which a section of the Manufactures building abounded. Men, as well as women, flocked to this artistic display.

other countries and her development as a commercial nation. While all of these things were not in strict conformity with the classification for the Liberal Arts Department, it was the best judgment of the Exposition Exhibits Division, since this was the first time in the history of expositions that the Celestial Empire had participated as a nation, that the entire exhibit should be shown in a single great section of one of the exhibit palaces. Hence the entire installation in the Liberal Arts Department.

COLONEL JOHN O. OCKERSON, CHIEF OF THE DEPARTMENT.

This important department was given over to the management of Colonel John O. Ockerson, who is one of the well known engineers of the United States. Born in Sweden, he was reared in Central Illinois. At fifteen he was a soldier in the Union army, and in 1873 graduated from the University of Illinois, Champaign, in Civil and Mining Engineering. Afterward he was engaged in engineering work on the Great Lakes, also as engineer with the Atchison, Topeka & Santa Fe Railway, and in 1876 was sent to South Pass to make surveys on the Mississippi improvements under the Eads contract. Since the winter of 1877-8 he has been almost continuously connected with the engineering work on the Mississippi river, and was with the Mississippi River Commission from 1879 until 1886. For three years he was manager and engineer of a large mine in Colorado. In 1889 he became principal assistant engineer for the Mississippi River Commission. In August, 1898, he was appointed a member of that commission, and holds that position at the present time. He was a member of the International Jury of Awards at the Paris Exposition of 1900, was United States Delegate to the International Congress of Merchant Marine and to the International Congress of Navigation, both held in Paris that year. For an elaborate paper on the improvement of the Mississippi river and other distinguished services rendered at the Paris exposition, a decoration was awarded him by the French government.

Colonel Ockerson was appointed Chief of the Department of Liberal Arts in January, 1902. His frequent contributions to engineering literature are well and favorably known both at home and abroad. His exhaustive studies of matters relating to water transportation have made him universally regarded as a very high authority on river and harbor improvements.

SALIENT FEATURES OF THE DEPARTMENT.

It may be said that with the exceptions of Music the grand classes of the department of Liberal Arts represented a practical phase of life. And since physicians and scientists have trumpeted the praises of Music as a cure for various nervous disorders, that may even be brought under the head of Personal Hygiene and given a practical stamp.

Printing and its closely allied art, Photography, enjoyed a most magnificent exposition, especially through the intelligent enthusiasm of the United States and Germany. The art of illustrating in the half-tone process was also exhibited by means of many complete and superb displays. This process, which is such a fascinating combination of photography and chemical engraving, has been the great means of encouraging the reading of good literature by making it attractive to the eye, and may be considered one of the most important of the educational and liberal arts of the day.

Civil and Military Engineering showed how great improvements had been made and were still progressing in the physical world; how man was molding the material universe for his own comfort, safety, protection and enjoyment. The engineering plans carried to a triumphant conclusion for furthering commerce, protecting the coasts and inland waters from possible foes, and safeguarding the lives of great municipalities, were clearly elaborated and formed a vast fund of instructive material.

A careful study of this department was of itself little less than a liberal education, but broad intelligence was required to obtain the greatest possible benefit from it.

CHAPTER XIV.

THE PALACE OF MACHINERY

A Tremendous Plant—Pan-American Cast in the Shade—Chief of Department Described—Wonders in the Realm of Machinery—An Enormous Steam Plant—Disposing of the Smoke—Interesting Array of Exhibits—Pumps that Move a Flood—Some of the Wonders Shown—Make-Up of Intramural System—Fire-Proof Steam Building—Steam Meters Displayed—Gorgeous Illumination of the Fair—Distant View Described—Music Adds to this Transport of Delight.

T IS very difficult to grasp the full meaning conveyed in the information that the Universal Exposition of 1904 required for its operation a total of something over 45,000 horse power. Very few people understand the importance of this statement. There are in existence today but two power plants larger than the power plant of the Louisiana Purchase Exposition. One of these is the Manhattan Elevated Railway Power Plant in New York, and the other is the Metropolitan Street Railway Plant, also in New York.

The power required for lighting, pumping, and for operating concessions and exhibits at the St. Louis world's fair was about two and one-half times the total power required for lighting the streets of the city of Chicago. An engine horse power is really one-fifth greater than the average power of the ordinary draught horse working eight hours daily; consequently the work performed by the power plant of this exposition closely approximates the performance of fifty-four thousand horses. Fifty-four thousand horses harnessed in spaces of ten feet from head to head would make a line over one hundred and two miles long—a distance somewhat greater than from New York to Philadelphia, or Chicago to Elkhart.

A TREMENDOUS PLANT.

But 45,000 horse power did not represent the total, for there was an overload or reserve capacity of at least 25 per cent which could be counted upon whenever it was needed for a limited period of time. This represents a working force equal to a line of horses one hundred and

twenty-eight miles long, or reaching from St. Louis to Jefferson City, or from Boston to Hartford.

PAN-AMERICAN CAST IN THE SHADE.

A great deal has been said and written about the power developed at Niagara Falls, and it is interesting to know that the total capacity of the Niagara Falls power plant, at the time of the Pan-American Exposition, was twenty-five thousand horse power. Of this about one-fifth, or five thousand horse power, was used for the decorative lighting of that exposition. Since then the capacity of the Niagara power plant has been doubled, and it now stands at fifty thousand horse power. The St. Louis exposition, therefore, had available nearly eleven times the amount of power delivered to the Pan-American Exposition by the Niagara Falls plant, and something over four thousand horse power greater than the total capacity of that famous power plant.

The power plant of the exposition occupied practically all of the western half of Machinery Hall, a space about six hundred feet long by three hundred feet wide. In this space the engines and generators were installed in a most attractive manner, and these prime movers represented the best engineering ability not only of America, but of England. France and Germany.

CHIEF OF DEPARTMENT DESCRIBED.

At the head of this great plant, and the extensive machinery exhibit of which it formed a part, was Thomas Morrell Moore, a native of New York. Mr. Moore was educated at Rutgers college, New Brunswick, N. J. He traveled extensively in Europe, Africa and South America and is a well known contributor to American and foreign journals. His first experience in exposition work was in connection with the Pan-American There he was originally given charge of the Machinery Exposition. department, but at later periods was given the management of the departments of Transportation, Exhibits, Agricultural Implements. Graphic Arts and Ordnance, or five exhibit divisions, which occupied seven of the fourteen exhibit buildings in that exposition.

He was appointed chief of the Department of Machinery, Universal Exposition of 1904, in February, 1902, and at once entered upon the discharge of his duties in an energetic manner.

WONDERS IN THE REALM OF MACHINERY.

In the palaces of Machinery and Electricity at the Louisiana Purchase Exposition could be seen the most startling proofs of man's recent conquests in harnessing and controlling the forces of nature.

Picture a building covering 400,000 square feet, which is about the size of four city blocks. Within, allot one-half the space to great engines of all descriptions, nearly every one larger than the famed Corliss type, which at the Philadelphia Centennial, was considered a wonder of the world.

Draw a mental picture of a three-story house with a frontage of twenty-five feet, a depth of sixty feet, a basement and a sub-cellar. Now, remove this house in its entirety and the space will be barely sufficient for the 5,000-horse power reciprocating steam engine, weighing over 500 tons which headed the procession of giant motors.

Next in line was a gas engine that produced 1,750 horse power, an exhibit from Germany, and near at hand were a host of wonderful high-speed engines, manufactured in different parts of the United States.

A tangential water wheel, operated by liquid forced through a nozzle at the rate of 1,200 gallons a minute, under a pressure of 300 pounds to the square inch, which terrific force whirled the great wheel at the rate of 900 revolutions a minute, was another sight.

A mammoth steam turbine, generating 8,000 horse power, was neighbor to another of the same style that generated 5,000 horse power.

The steam turbine that, under normal conditions, can develop 8,000 horse power, can, when pushed, produce the enormous force of 12,000 horse power. Think what that means—a string of horses, harnessed tandem, working close together, covering a straightaway road twenty-three miles long.

AN ENORMOUS STEAM PLANT.

The steam for the operation of the various engines exhibited was generated in the Steam, Gas and Fuels building, a fireproof structure three hundred and thirty feet long by three hundred feet wide, located about one hundred feet distant from Machiney Hall. The pipe lines, conveying the steam from the boilers to the engines and returning the condensed water back to the boilers from the condensers, occupied a tunnel seven feet broad and eight feet deep. One of these steam lines was

eighteen inches in diameter, another sixteen inches in diameter, and none less than ten inches. When the boilers operated at full load they evaporated something over seven hundred thousand pounds of water per hour. This means that three hundred and fifty tons of water were hourly changed into steam, passed through the engines, returned to the form of water by passing through huge condensers, and then re-delivered to the boilers to be again transformed into live steam.

DISPOSING OF THE SMOKE.

Owing to the central location of the Steam, Gas and Fuels building, it would have been unsightly to avail of the tall smoke stacks required for the operation of the boilers under natural draught, consequently the draught had to be created by huge fans. The weight of this apparatus alone closely approximated three hundred tons. A number of the fans were twenty feet in diameter and for driving them independent engines were provided. To avoid the smoke nuisance the boilers were equipped with mechanical stokers. These mechanical stokers were automatically supplied with coal by a conveyor system which took the coal from the cars, crushed it and delivered it into ten and twenty ton hoppers directly in front of the various batteries of boilers.

INTERESTING ARRAY OF EXHIBITS.

The eastern end of Machiney Hall was given up to exhibits of machine tools and wood-working machinery and the accessories which are employed in power-plant and machine-shop practice. A most interesting exhibit was an hydraulic press, built at the Krupp works, in Essen, Germany. This press exerts the enormous pressure of ninety thousand pounds to the square inch. It is constructed for the purpose of embossing metals, and it performs this function by the direct action of the water on the metals to be embossed.

The range in machine tools—that is, in tools for cutting, forming and manipulating metals—ranged from the small machines for working out the tiny screws, bolts and gears of a watch to the huge lathes for turning the largest cannon or the shafting for an ocean liner.

ENORMOUS METAL AND WOOD-WORKING MACHINES.

Some of the machines for planing metal were over seventy-five feet long and eighteen feet wide, covering an area larger than the floor plan of an ordinary residence. In the wood-working section the display was exhaustive and showed machines capable of performing the most delicate grill work, and from these led up to the massive machines for transforming into merchantable lumber the giant trees of the Pacific Coast.

VALUED AT A KING'S RANSOM.

The total value of the exhibits in Machinery Hall and the Steam, Gas and Fuels building exceeded eight millions of dollars. The most massive and powerful engine with its electric generator weighed over six hundred tons, and this generating set complete with boilers, mechanical draught and stoker equipment, condensers and accessories weighed over one thousand tons. The total weight of the exhibits was over sixty thousand tons.

PUMPS THAT MOVE A FLOOD.

The Machinery Department furnished as an exhibit the three pumps which delivered the water to flow over the Cascades. The capacity of these pumps was at normal load ninety thousand gallons per minute, but they were planned to take care of an overload of over twenty-five per cent, which brought their maximum capacity up to one hundred and fifteen thousand gallons of water per minute. They did this against a total head of one hundred and fifty-eight feet. Large volumes of water have been handled to a lesser elevation, but no such amount of water has ever been artificially moved to such a height as was required in the Cascades of this exposition.

It is stated that the average daily consumption of water for all purposes by the entire city of St. Louis is about sixty-five million gallons. The Cascade pumps of the Universal Exposition of 1904 were capable of handling one hundred and sixty-five million gallons of water daily; that is, one hundred million gallons more than the entire city of St. Louis uses per day.

SOME OF THE WONDERS SHOWN.

The Exhibitors' Power Plant at the St. Louis exposition was composed of items furnished by more than ninety engineering firms, amongst whom were many of the leading companies of the United States, as well as several European countries. A unique feature of this installation was the tangential water-wheel exhibited by the Abner Doble Co., of San Francisco; this wheel, developing 160 B. H. P. at 700 revolutions per

minute, was directly connected to a 100 K. W. generator; water for driving the wheel was furnished at a pressure of 300 pounds per square inch by a triple expansion condensing pump from the Janesville Iron Works. The other exhibitors in connection with the water-wheel unit, together with the items furnished, were as follows: Builders' Iron Foundry, Venturi meter; Lombard Governor Company, governor and relief valve; Schaffer & Budenberg Mfg. Company, tachometer and pressure gage; W. H. Nicholson & Co., combination steam separator, receiver and trap; Fisher Governor Company, steam pump governor; Greene, Tweed & Co., lubricators; Holmes Metallic Packing Company, metallic packing.

MAKE-UP OF INTRAMURAL SYSTEM.

The second group of the Intramural System consisted of a 1,400 horse power cross compound Buckeye engine with cylinders 26 1-2 in. and 50 in. by 48 in, direct connected to a 900 K. W. generator operating at 100 revolutions per minute, together with two Brown-Corliss vertical cross compound engines, cylinders 18 in. and 36 in. by 36 in., revolutions per minute 135, each direct connected to a 500 K. W. generator.

The Wheeler Condenser & Engineering Company furnished for this group an Admiralty type of surface condenser, with pumps, complete. This condenser also took care of the exhaust steam from a Greenwald 600 horse power cross compound engine, which was direct connected to a Fort Wayne Electric Works' 400 K. W. 250 volt D. C. generator.

FIRE-PROOF STEAM BUILDING.

A separate fire-proof building was provided for the installation of boilers, gas generating plants, briquette machinery, and other apparatus for use in connection with boilers and fuels. The exhibitors' boilers have a rated capacity of more than fifteen thousand boiler horse power, this being provided by a number of different varieties, but all of the water tube type.

The largest installation was that made by the Aultman & Taylor Machinery Company, who furnished sixteen horizontal and three vertical Cahall boilers with a total rating of over eight thousand horse power. The horizontal boilers were installed in batteries of two each; two of these batteries are designed for a steam pressure of 225 pounds per square inch and supply steam for the operation of the turbines, the steam being delivered at throttles with pressure of 185 pounds.

STEAM METERS DISPLAYED.

An exhibit of considerable interest was contributed by the American Steam Meter Company, of Chicago, consisting of a steam meter in pipe line to boiler feed pumps, this meter being provided with a dial to register actual quantity of steam used regardless of pressure.

In addition to the power supplied by the Exhibitors' Power Plant there were eight thousand kilowatts of electrical power produced by the Exposition Power Plant, in Machinery Hall. A large number of exhibitors showed their machinery in operation so that the total output amounted to more than thirty-five thousand horse power produced by what was undoubtedly the most interesting power plant ever established.

GORGEOUS ILLUMINATION OF THE FAIR.

Directly identified with this department was the problem of illumination of grounds, buildings and exhibits. It was a rare occasion when first the bud of electric illumination at the world's fair burst into blossom, and after that first night of informal rehearsal, every time that the lights were turned on was a delightful occasion to those privileged to be present.

It was best to see the illumination at first from a considerable distance. One should have obtained his first glimpse of this magnified fairyland from outside of the grounds, or at any rate from a point a mile or so away from the "Main Picture," which was the center of the illuminative features. The right should have been dark, with neither moon nor stars visible, but free from clouds, so that the lights be not dimmed by the misty haze.

DISTANT VIEW DESCRIBED.

Riding around a curve on a trolley car, or topping the brow of a hill, one suddenly became aware of something wonderful in the distance, a mighty bouquet of light blossoming out of the darkness. Imagine yourself as again there. For half a mile the flowers of light sparkle in the murk—clear, clean-cut, golden. The distance not only lends enchantment to the view, but mellows the scene to a soft glow, soothing to the eyes. One beholds glowing through the darkness, long lines of little lights, broken here and there into fantastic designs. Now a huge star breaks out, made of many lights. Yonder is circle after circle of gleam-

ing brilliancies, far up in the sky. Still higher up is outlined a skeleton framework of lights, and you know that it is the illumination of a tower, though you see nothing whatever of the tower itself.

Lower down are parallel rows of lamps, in parallelogram form, leading hundreds of yards horizontally, and sixty or seventy feet perpendicularly, the perpendiculars crossing the other lines at frequent intervals, and ending in circles and diamonds and squares and crosses. You know that this is the outline of one of the mighty exhibit palaces, but you see nothing of the building itself. A glorious archway in electric lights marks a main entrance, and overhead a curious arrangement of lamps suggests a gigantic statue or a mighty pediment of reclining figures, though there is nothing visible of the statuary staff.

If you are familiar with the shapes of the buildings, you can distinguish one from another by these lights. The classic pillars on the colonnade of the Palace of Varied Industries flash themselves into fiery outline. The massive pylons at each end of the Palace of Transportation are told forth in the living language of the lamps. The Palace of Electricity is a gleaming telltale ghost of its own glories of architecture.

VIEW OF THE PIECE DE RESISTANCE.

Yonder, high up on Art Hill, rises in lines of lights converging to a common center the illumination that marks Festival Hall and its wonderful dome, and just below are the great fountains and the Cascades, leading down to the Grand Basin and the lagoons, which are spanned by bridges outlined in electric glow. At each side on the hilltop, lights lead the vision along the Colonnade of States to the towering twin pavilions, with their lesser domes flanking Festival Hall.

Away down in the center of the bouquet of brilliance you behold a single flower rising above the rest, and you know that the name of this slender stalk is Louisiana Purchase Monument. It is time now that you come nearer to the picture. As you approach, the darkness gradually melts from the vicinity of the little lamps, and you perceive the ivorytinted exteriors of the huge buildings, glowing in the light of thousands of lamps. Stepping into the edges of the main picture, you are entranced by the scene. Lagoons and plazas and broad thoroughfares for promenade are made as bright as day. Thousands of people pass along the promenade, stand upon the bridges, or float in the many gondolas. You are in fairyland indeed!

MUSIC ADDS TO THIS TRANSPORT OF DELIGHT.

Suddenly the scene changes. Sound lends its magic to the aid of light. From the Festival Hall pour forth the harmonies of the mighty pipe organ. Orchestras here and there, in picturesque pavilions, make tender melodies.

And then the golden glow of the lights on Festival Hall, and the fountains and Cascades is changed to other hues, now red, now blue, now violet, now a variegated brilliance, including all the colors of the prism, and the waters of the leaping fountains and plunging cascades blossom like flowers, and the green sward on the slopes of Art Hill becomes a plain of fire, and the flower beds take on fantastic hues. The lights change and change in bewildering variety.

Then, from the great German Castle on the hill, peal forth the chimes of deep-toned bells, resonant and clear, and the susceptible young damsel in the Venetian gondola under the bridge goes into exclamations of ecstacy, but the soberer-minded folk remove their hats, and stand silent, awed by the magnificent expression of the genius of man working with the wonders that God has wrought.

And all this feast of light and flame and color can be traced back by the simple operation of thought to the ponderous engines that throb in the Machinery building and the dynamos that grind in the Palace of Electricity. And the thought itself reminds us that ours is the Age of Machinery as well as the Age of Electricity, also recalling that prophecy that before many years shall pass steam as a motive and motor power is to be replaced by the more subtle and equally effective agent. The wonderful versatility of electricity was in no way more fully illustrated than in the fact that it not only operated so large a portion of the ponderous machinery in this palace, but also produced these countless fairy visions of light, flame and color.

THE HEART OF THE EXPOSITION.

From the Palace of Machinery went forth the power which maintained the life of the entire exposition. It gave it light. Every one of the thousands of exhibits which required motion for its effective display received its inspiration from Machinery hall. Had its great engines ceased for a minute after the fall of night the Louisiana Purchase Exposition would have been a city of gloom filled with sudden panic. No

wonder it was christened the Heart of the Exposition, pumping as it did a thousand life-giving currents through the vast body of the world's fair.

The concentration of architectural beauties and grandeurs, and the scenic charms around Festival hall and the Cascades, might earn for that locality the title of the Face of the Fair; but what would become of the bright, rosy, speaking charms of the Face without the action of the Heart to maintain its current of life! The hall would be a gloomy pile, and the Cascades thus only in name. Power was the basis of the light and beauty of the fair, as it is of the intellectual and artistic life of to-day.

Looking at the subject from this point of view, far more sentiment and national pride could be extracted from every square foot of the Palace of Machinery than from any building of the exposition, not even excepting the Palace of Fine Arts. It was an epitome of America as it is to-day, not as it may be one hundred years hence.

To the average citizen of America the clangor of the mighty engines was like the deep note of a mighty organ to the musician, or the vast swing of an epic to the poet. His heart swelled within him as the combined buzz of a thousand machines swelled into a roar like the ocean surf. Practical man that he was, he also knew that the industrial wealth represented by the Palace of Machinery was forming a substantial basis for the development of the higher life in America—that life which in the mature and prosperous countries of the Old World was also founded upon wealth of a gradual and slower growth.

CHAPTER XV.

THE PALACE OF ELECTRICITY

Professor W. E. Goldsborough—Arrangement of Electrical Exhibits—Display in the Traction Field—Wireless Telegraph and Telephone Tests—Electricity in Therapeutics—Other Medical Apparatus—In the Field of Electric Illumination—Practical Laboratories Shown—Historical Electrical Exhibits—Mysteries of Electrical Palace—Electricity in Warfare—International Electrical Congress.

HE Palace of Electricity proved to be one of the great centers of attraction at the fair on account of the large number and variety of operating exhibits. Many of the exhibitors who visited the exposition expressed themselves in very enthusiastic terms about the favorable location of the building, its excellent arrangement for displaying exhibits, and the facilities for showing all kinds of machinery in action.

The application of electricity to every branch of industry has made such great advance in the last ten years that many improvements were shown here that were entirely new to the public in general.

PROFESSOR W. E. GOLDSBOROUGH.

This interesting and educational feature of the Louisiana Purchase Exposition was in the hands of Prof. W. E. Goldsborough, chief of the Department of Electricity. Prof. Goldsborough was born at Baltimore, Md. At an early age he went to China with his father, who was American Consul to Amoy. During his residence there, he visited nearly every section of the Chinese Empire, and also traveled through Japan and Hindustan. He returned to the United States to take a course in electrical engineering at Cornell University, and graduated from that institution with the degree of M. E.

For a time he had charge of the electrical work of the International Correspondence Schools at Scranton, Pa. In 1893 he was appointed Professor of Electrical Engineering of Arkansas University at Fayetteville, Ark. The following year he was called to Purdue University as Associate Professor of Electrical Engineering. In 1896 he was made full professor, and the succeeding year was elected Director of the Electrical Laboratory.

Professor Goldsborough has been connected with the various expositions since 1893, being a member of the International Electrical Congress at Chicago, and was associated, in an official way, with the expositions of Omaha and Buffalo. He was one of the delegates of the American Institute of Electrical Engineers at the Paris Exposition in 1900. He is a member of numerous engineering and scientific societies, being one of the Board of Managers of the American Institute of Electrical Engineers, a member of the Institution of Electrical Engineers of England, the Franklin Institute, the American Association for the Advancement of Science, the Society for the Promotion of Engineering Education, the National Electric Light Association, the American Electrochemical Society, and the American Electro-Therapeutic Association.

Professor Goldsborough is well known to the engineering and scientific world through numerous contributions to the Transactions of the American Institute of Electrical Engineers, and papers read before the National Electric Light Association and other engineering societies, as well as many contributions to the scientific and electrical press.

ARRANGEMENT OF ELECTRICAL EXHIBITS.

The largest classification, both in area of space and number of exhibits, in the Palace of Electricity, was that of the machines for generating and using electricity. Dynamos and motors of all the principal makes, both alternating and direct current, were on exhibition, most of them running. The largest of these machines were located under the traveling crane along the west side of the Palace of Electricity, so as to facilitate placing and removing heavy parts. Motor-generators, rotary converters, transformers, rheostats and regulators of every form were so arranged and connected as to demonstrate their various functions. There were shown ingenious applications of motors to the diverse forms of power machines, in which so much progress has been made in recent years. The principal companies in the electrical industry were mainly interested in this general classification, and their representation in the group did credit to themselves and to the exposition.

DISPLAY IN THE TRACTION FIELD.

Opportunity was given both for still and live exhibits in the street railway field. Those within the Palace of Electricity were chiefly motors, controllers, switch boards and auxiliary apparatus. Outside there was a double testing track about 1,400 feet long, upon which speed, acceleration, braking and efficiency tests were run. Electric railway equipments of standard form were tested, and not only this, but systems now being developed were given official recognition, and the utility of electric railway signal apparatus and safety devices of every form was demonstrated.

Expositions both in this country and Europe have marked each great step in the advance of high potential practice, and the St. Louis fair proved to be no exception. Arrangements were made for showing the phenomena of high potential currents, beyond anything in this line attempted in previous expositions. While proper safeguards were thrown about such demonstrations, yet they were conducted in such a way that the general public as well as electrical engineers might profit by them.

WIRELESS TELEGRAPH AND TELEPHONE TESTS.

Perhaps the wireless telegraph and telephone exhibits attracted as much attention as any feature on the grounds. The largest wireless telegraph station ever erected had a conspicuous location from which visitors could send messages to adjoining cities in the same manner, and with the same expedition as they would send them over a telegraph line.

Several inventors and companies had exhibits of wireless telephony over comparatively short distances. The telephone stations, separated the length of the building, were used without any metallic connection between them. The waves emanated from the coils of the sending station, and induced corresponding pulsations in the coils of the receiving station, so that a conversation could be heard from one to the other.

ELECTRICITY IN THERAPEUTICS.

It is probable that no branch of therapeutics has made a greater advance than the electrical. Electricity in the form of direct, alternating and intermittent current is now utilized in the treatment of many forms of diseases, especially chronic cases which have been especially refractory. The electro-therapeutic apparatus displayed at the fair included x-ray tubes for physical treatment and for diagnosis, and the Finsen lights which give off actinic or higher light rays, and are especially efficacious in the treatment of certain diseases.

OTHER MEDICAL APPARATUS.

Electro-magnetic instruments were also on exhibit, and were shown in operation for the special treatment of ear diseases. The acoustican, an instrument which very largely performs the function of the ear, was graphically demonstrated, and persons who had never heard a sound since birth received the sense of hearing through this instrument. On account of the great number and variety of exhibits in this classification, the Palace of Electricity proved a center of interest to surgeons and physicians who are keeping abreast of the times in their particular field of endeavor.

IN THE FIELD OF ELECTRIC ILLUMINATION.

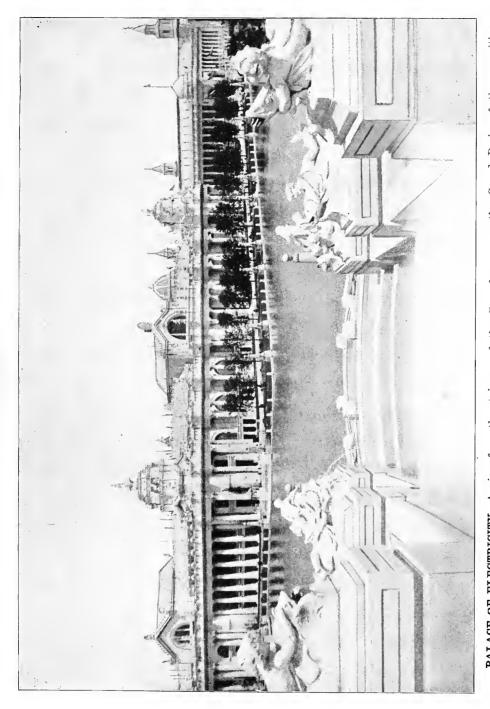
A large number of inventions in the line of electric lighting have been made in recent years, and these were all demonstrated in a way which proved exceedingly attractive to the public. Arc lamps of every kind were shown, and incandescent lights of every size and color were displayed. Nernst lamps were utilized in lighting one of the buildings. The Cooper-Hewitt vapor lamps illuminated the Cascades, and were shown in the Palace of Electricity. These lamps emit an intense white light, in which the absence of red rays gives a very peculiar effect. Vacuum tube lighting by means of induced currents was also shown in a way that was exceedingly attractive to the eye.

ELECTRO-CHEMISTRY DISPLAY.

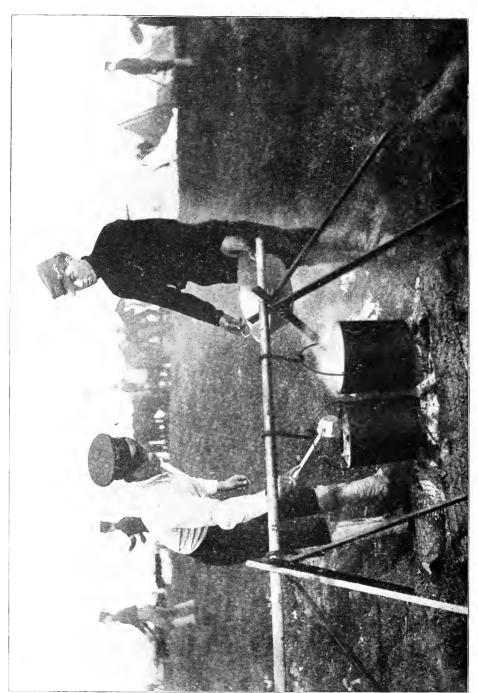
In the field of electro-chemistry many new processes have lately been developed into commercial possibilities. A number of the great manufacturing companies at Niagara Falls and other water power centers exhibited their electric furnaces and chemical processes in operation. The products of these furnaces are, as a rule, much purer than the products which are made in any other way, and it was of interest to the public to see the operation and the chemical changes which go on under the influence of the electric arc.

PRACTICAL LABORATORIES SHOWN.

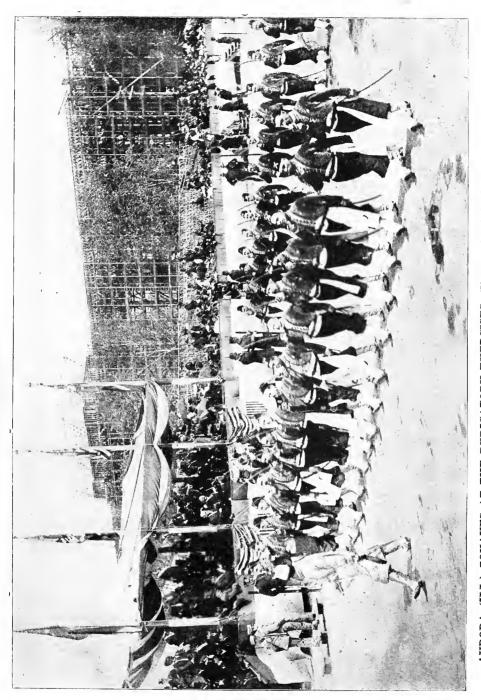
One of the many features of this wonderful palace devoted to the mysterious forces of nature was the establishment of special laboratories with complete sets of recording instruments, whereby the juries of award and exhibitors could conduct careful and accurate tests upon every



PALACE OF ELECTRICITY—A view from the stairway of the Caseades, across the Grand Basin of the exposition grounds, is both charming and inspiring. Taking a position near the beautiful statuary artistically grouped in this locality, the stately outlines of the Electricity building arise immediately before the spectator, typical of the progressive spirit of the age. To the right is the Varied Industries Building.

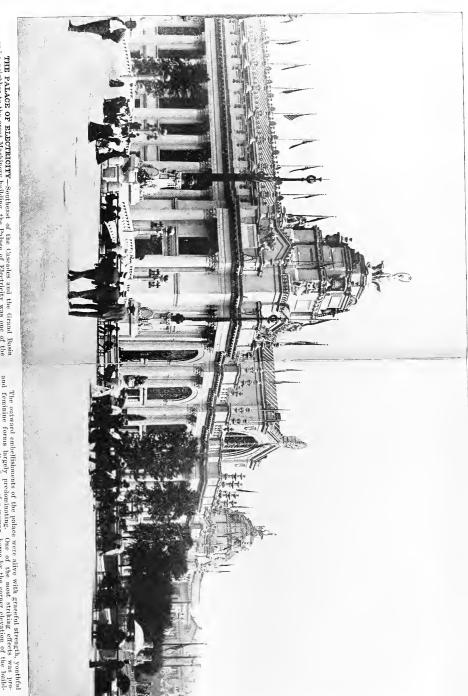


UNCLE SAM'S BOYS PREPARING A STEW—A duplicate of the old fashioned crane is provided by Uncle Sam's cavalry boys in the open field. When the savory stew is finished those in the background will be made happy, including the four-footed animals who will probably be turned out to grass.



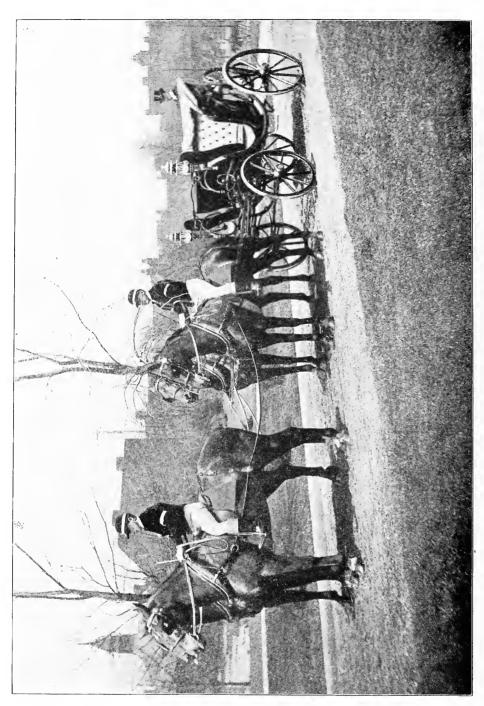
AURORA (ILL.) COUAVES AT THE DEDICATORY EXERCISES—The parade of the State and local military organizations of the country was a brilliant event in the dedicatory exercises of the Louisiana Purchase Exposition. Of the crack companies representing the great commonwealths of the country the Aurora (III.) Zouaves, here shown as they were passing the reviewing stand, caused much favorable comment because of their dash and soldierly bearing.



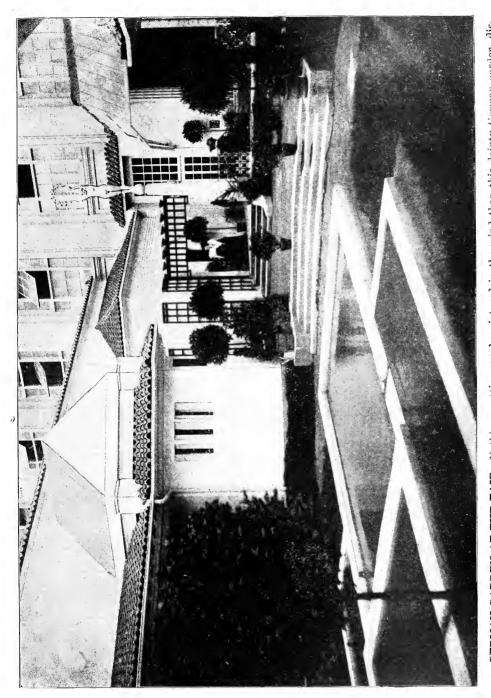


THE PALACE OF ELECTRICITY—Southeast of the Cascades and the Grand Basin and a neighbor to the great Machinery building, the Palace of Electricity was one of the most speaking structures of the Louisiana Purchase Exposition. The building was both stately and graceful in its architectural hearing, thereby carrying out the characteristics of the wonderful power which it symbolized.

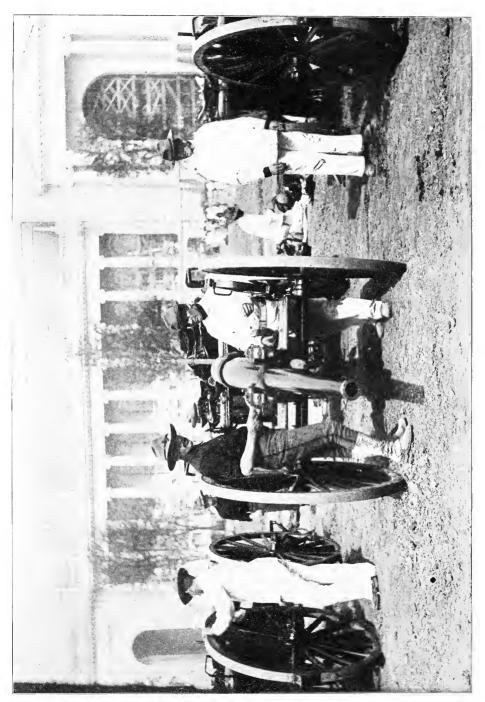
The outward embellishments of the palace were alive with graceful strength, youthful and feminine forms largely predominating. One of the most striking effects was produced by the commanding figure of a woman, home by the corner elevation of the building and bohing aloft in her upward extended hands a large five-pointed star from which at night darfied the pure white electric rays.



WORLD'S FAIR GIFT TO A PRINCE—This magnificent state carriage was presented by Adolphus Busch to Prince Poo Lun, China's most distinguished representative. The presentation was made on the occasion of the future ruler of China's visit to the newly opened exposition in May. It was a common sight to witness the oriental potentate driving about in this beautiful equipage attired in eastern splendor and attended by a retinue.



GERMAN GARDEN AT THE FAIR—Nothing prettier can be pictured in the mind than this dainty German garden, displayed as an exhibit at the Louisiana Purchase Exposition. It loomed up fresh, green, cool and inviting, even on the warmest days of the summer. Its soothing influence and restful suggestion proved a welcome innovation to many weary sightseers.



READY FOR BUSINESS—Artillery display at the world's fair in the hands of regulars. Much could be learned of war as well as of the triumphs of peace. Aside from the government display in its own building there were detachments of cavalry, infantry and artillery constantly in attendance, besides marines and a large force of Philippine constabulary.

kind of electrical apparatus shown in the Palace of Electricity. The presence of such laboratories at an exposition was a new departure, and added greatly to the value of the awards, as the personal factor and the personal judgment of the jury were minimized because the actual data regarding the performance of the machines or mechanism could be accurately ascertained.

HISTORICAL ELECTRICAL EXHIBITS.

A number of historical exhibits of very great merit were displayed in this building. Thomas A. Edison, Chief Consulting Electrical Engineer of the Department, made a personal exhibit, showing the earliest forms of the incandescent lamp, phonograph, generators and other mechanisms which he has contributed so much to develop. The storage battery he has designed especially for automobile use, combining light weight with high discharge rates, drew the attention of engineers as well as the public.

DISPELLING POPULAR IGNORANCE.

Through the American Institute of Electrical Engineers, all kinds of early types of electrical machines and apparatus were shown, and this temporary collection proved to be the most complete ever gathered together. Displays from several associations, universities and laboratories contained delicate and accurate instruments, as well as indicated methods of research work. It was intended to have these exhibits which are not commercial in character highly educating to the public, and thus dispel to some extent the mystery which enshrouds the layman's mind in all things pertaining to this form of energy—a purpose that was largely fulfilled.

MYSTERIES OF ELECTRICAL PALACE.

If the old Greeks, who found that pieces of amber rubbed together would attract feathers, and thereupon decided that amber had a soul, unconsciously discovering the first electrical phenomenon recorded, could have been with the crowds in the Palace of Electricity, they would have decided that the soul is a much greater thing than even their philosophers imagined.

It has taken a long time to work the problem out, but the big, noiseless overhead crane in the Electricity building that picked up huge castings weighing tons as easily as the amber picked up partridge feathers, did it by the same electrical power. Whirling dynamos, gathering the mysterious current from apparently nothing but the surrounding air, flashed it along wires to the motors which it propelled. And the motors did almost everything. The huge overhead crane was the biggest thing they moved, and the marvelous ease with which it was handled gives a good idea of how electricity can be made to toil.

The same immense dynamos that furnished current for power, furnished currents for dazzling lights of every type from tiny incandescents to the big searchlights which threw their beams for miles. The same current supplied to the telephone systems in the building carried the voice and operated the telegraph instruments and stock tickers.

ELECTRICITY IN WARFARE.

Telephony, telegraphy (both wireless and along metal conductors), had their divisions, and so had electric lighting. The modern uses of the latter in warfare and in peace were fully demonstrated, searchlights for battleships and for forts ranging beside the beacon lights that shine forth from coast-guard towers.

More than seven acres of floor space were devoted to this wonderful lesson in the growth of man's control of electricity and his application of the mysterious power to the improvement of his condition.

It was the first time in the history of expositions that such a display had been made and the assembling of apparatus from all over the world was considered one of the brilliant and distinctive features of this world's fair.

INTERNATIONAL ELECTRICAL CONGRESS.

Not only in a material way was the Electrical Department a center of interest, but the International Electrical Congress drew from all countries the most eminent engineers. The Congress at Chicago in 1893, and at Paris in 1900, had an important influence on the world's progress in the knowledge and application of electricity and magnetism, and it was to be expected that the gathering at St. Louis would be equally potent. Conventions of electrical associations were held simultaneously in connection with the Congress, but each had its separate program and place of meeting, until the final day, when a general convocation was called. The exposition authorities provided ample facilities for the accommodation of the Congress and the various conventions in the halls of the Washington University, and the other buildings about the grounds.

CHAPTER XVI.

THE PALACE OF AGRICULTURE

Largest of the Exposition Palaces—Chief of Department, Frederick W. Taylor—Description of Building—The Leviathan Contrasted—Scope of the Exhibits—Rivalry Among the States—Bounty of Nature Shown—Corn is King—Panorama of Cotton Industry—Commercial Aspects Shown—Sugar Industry Demonstrated—Tobacco in Many Forms—Products of the American Cow—Scientific Treatment of Milk—Sculpture in Butter and Cheese—Food and Food Products—A Grand Free Lunch—World's Largest Wine Cask—Agricultural Implements—Home for Farmers' Meetings—A Map in Living Vegetation.

THE Palaces of Agriculture and Horticulture crowned a beautiful eminence, rightly named "Agricultural Hill." They provided for the housing of the products of the fields, orchards, vineyards and gardens, and were surrounded by profuse formal and informal land-scape gardening, making a setting at once appropriate and pleasing in artistic grouping. Grasses, bulbs, shrubs, creepers, aquatics, roses, conifers and all else that Mother Nature supplies in wanton profusion were blended in this setting for these imposing structures.

LARGEST OF THE EXPOSITION PALACES.

The Palace of Agriculture, the largest structure on the grounds, covered approximately twenty acres of land, and the Palace of Horticulture, six acres. These structures were treated in color, in part, and in that much differed from the other exposition palaces, which were finished in old ivory tints. In all, inside and outside space, more than seventy acres were devoted to the progress and development of the science of husbandry.

The twenty acres of floor space devoted to agriculture proved much less than could be used by this largest and most profitable of American industries. Enormous as the structure was, there were ungranted applications for space on file which would require an additional twenty acres. This condition illustrated the widespread interest and activity in all that pertains to the soil and its fruits.

CHIEF OF DEPARTMENTS, FREDERIC W. TAYLOR.

For the excellence of these two great features of the fair credit is due to Frederic W. Taylor, chief of both departments. To both he brought exceedingly useful experience and ability. Mr. Taylor is a Western man. He served a thorough apprenticeship in the nursery business with his father, as well as in one of the largest nurseries of the country, and almost immediately after attaining his majority embarked in the nursery business for himself, at the same time managing a large stock farm. In 1887 he was made Professor of Horticulture at the University of Nebraska, holding the position for several years, also carrying the organization and management of the farmers' institutes of the State and of the university extension work. By reason of his close acquaintance with farming throughout all these years he has kept in close touch with the advancement and use of improved methods and appliances.

Mr. Taylor's exposition experience began when he took charge of the Nebraska State Horticultural Exhibit at the Chicago exposition. He was very successful as Superintendent of Agriculture, Horticulture and Forestry at the Trans-Mississippi Exposition at Omaha, in 1898. At the Pan-American Exposition he combined the arduous duties of Director of Concessions and those of Superintendent of Horticulture, Forestry and Foods and their Accessories, leaving that exposition only to begin the preparatory work connected with the two departments of the Louisiana Purchase Exposition. He has attended many of the large expositions of Europe, thereby broadening his knowledge of the work.

DESCRIPTION OF THE PALACE.

The Agriculture Palace was 500 feet wide by 1,600 feet, or over a quarter of a mile in length. These bare figures do not convey an adequate idea of the mammoth proportions of the structure with its 800,000 square feet, equaling nearly twenty acres of floor space. The contract price for the construction of the Palace of Agriculture was \$529,940. This does not include the expense of applying the colors in the working out of the elaborate and beautiful color scheme or for other incidentals.

A walk of three-quarters of a mile was required to simply pass around it. The diagonal of the building was nearly a third of a mile. The Eiffel Tower, lying flat on its side, would measure less than two-thirds of the length of the building, while three Washington monuments could have been laid end to end diagonally through it.

THE LEVIATHAN CONTRASTED.

Sixteen vessels of the size of the largest steamer afloat, the Cedric, could be housed in the building and there would be room left for the landing stage. Thirteen miles of freight cars, together with locomotives and way-cars enough to handle them, could be housed in the building. Arranged as a corn crib it could hold nearly the entire crop for two years of New England and New York, or half the sixty-five million bushels constituting the average annual crop of Missouri.

Converted into a vast silo, and filled, it would store silage enough to winter many more than the three million head of cattle shown by the last census to be in Missouri.

Used as an apple bin, it would hold a peck of fruit for each man, woman and child in the United States, the Philippines and Hawaii, and there would be a double supply for each of our Cuban neighbors. The entire barley crop of the United States could have been housed in it.

The first thought suggested by looking upon this colossus was acknowledgment of the truth of the statement of James J. Hill, the railway magnate, that "nearly one-half of the capital of the country is invested in agricultural land, and what goes with it for the purpose of making it productive. Nearly one-half of the population of the country is directly or indirectly connected with the cultivation of the soil, and if we judge from all the experience of the past, the agricultural half of the population has done more than its share in everything that goes to benefit the country as a whole."

SCOPE OF THE EXHIBIT.

The general scope of the classification and grouping in the Palace of Agriculture covered all the products coming from the soil; the tools, implements, methods of cultivation, of harvesting, of irrigation, of drainage; the by-products and the manufactured forms of those products; their preparation and preservation, including everything edible and drinkable which comes however remotely from the soil and which enters into the home life or commerce of the people of the world.

At the opening of the fair there were on file in the Department of Agriculture, formal applications from fifteen foreign countries and forty-two states and tentative applications from a number of other foreign countries.

In nearly every case, the applications were for a greater amount of space than was possible to set aside, even though the exhibits offered were of the highest possible excellence.

RIVALRY AMONG THE STATES.

A friendly rivalry among the States was strongly manifested by the painstaking elaboration which characterized their efforts in presenting the salient phases of the agriculture of each. The experience of the past, combined with modern knowledge in producing the results, made the St. Louis world's fair par excellence the most comprehensive and intelligent epitome of husbandry yet seen by the world.

BOUNTY OF NATURE SHOWN.

Special features in the way of universal exhibits occupied the central bay of the Palace of Agriculture. This bay was 106 by 1,600 feet, and the truss beams 60 feet from the floor. Here were corn, cotton, tobacco, cane and beet sugar, pure foods, and Experiment Station exhibits, which have to do with practical agriculture. By "Special Exhibits" is meant that the presentation of these crops was compiled from the products of each of the States growing them on a commercial scale. These universal exhibits were really auxiliary to the State collections; and were intended to relieve them in a certain sense from sameness and repetition by bringing the materials from each and blending them into an harmonious whole; and at the same time to carefully emphasize characteristics and peculiarities in the cultivation, harvesting and handling, as well as the differences in the resulting products coming from the varying soils and climatic conditions prevailing in this country.

CORN IS KING.

Every state in the union was represented in the rivalry over corn. In the 15,000 feet devoted to corn the product of each of the states could be found in apposition for easy comparison and this proved of great interest to the grower, no matter from whence he hailed. All that pertains to corn and its cultivation, including methods, selection and breeding, was shown. Adjoining were found the commercial products and by-products of corn; the several varieties of starch, of glucose, of dextrin, of sugar, of syrup; corn oil, rubber, oil cake, germ oil meal, gluten meal; of corn meal, samp, grits, hominy; of stock foods, stover,

ensilage, fodder, shucks, shuck mats and mattresses; canned or preserved corn, malt, dry wines, whisky, alcohol, cob ash, cob pipes, etc.

Besides these objects the statistical phase of the crop was so illustrated as to show at a glance the production in the United States and the relation each state bears to the total crop, and other pertinent items of statistical interest.

The very conspicuous space allotted to this feature, comprising three blocks, was so located as to present most effectively from all directions of approach the ornate design intended to cover the whole space boundaries. The exterior was treated exclusively in corn, the shuck, stalk, ear, cob, and grain, all contributing to produce the most effective results.

PANORAMA OF COTTON INDUSTRY.

A space of similar size and location was devoted to cotton. Here again the methods of cultivation, of harvesting, of growing, of baling, and in fact, the whole story from the field to the factory door was fully illustrated, including some of the processes and a few of the cloths, showing the finished product. The purpose of the exhibit, which was participated in by all cotton-growing states, was to present an epitome of the cotton industry.

It began with the preparation of the soil, then covered seeding, cultivation, harvesting, baling, and ended with the delivery at the factory door. All the tools, implements and machinery necessary for the demonstration of these processes were shown. In addition, the products and by-products of cotton and cotton seed were fully demonstrated.

The cotton seed, for years considered of no value, has now become almost as important in its relations to commerce as the lint itself. The extraction of oil, its refining and preparation as food; the value of the meal, both as a fertilizer and as a food for animals; the hulls and their value as a food for animals and use in other ways, were all interestingly shown, to say nothing of the soap and lesser articles which find a place in the marts of the world.

Texas, the largest producer of cotton in the world, took the lead in this enterprise, and the magnificent dome which ornamented the center of the exhibit, was surmounted by a figure holding aloft a lone star, the emblem of that state.

Mississippi had a statue of King Cotton enthroned, more than thirty feet in height. This was surrounded by growing fields of the fleecy staple, in which could be seen four or five figures harvesting the crop.

Missouri, Indian Territory, Georgia and North Carolina all joined in this magnificent presentation, the latter state showing the processes, including the cloths manufactured in that state.

COMMERCIAL ASPECTS SHOWN.

Commercial cotton samples from all the states and the leading world marts rested side by side, all graded and labelled; each cotton growing state having its section showing its lint and its commercial grades. The seed with its products of oil and meal and the by-products and uses of all of these were shown as already described. The presentation constituted a spectacle not seen in any previous exposition. The statistics of the crop were carefully worked out, so that the relation of the participating states to the total crop were plainly set forth.

The ornamentation of the exhibit consisted of a central dome with lateral facades flanking the inner service aisles, the whole surrounded by low railing, thus giving full effect and force to the ornate elevation. This central figure was adorned by statuary representing an old style oil press operated by gracefully draped female figures which constituted the frontal piece of a vast crown shaped dome. The remaining ornamentation was of cotton bolls and leaves, cotton baskets and other appropriate designs.

SUGAR INDUSTRY DEMONSTRATED.

The sugar crop of the United States is one of growing importance, and the extension is notable in both the sources for sugar. The cane sugar interest is largely centered in Louisiana and that state, of course, took the lead in presenting this industry. The cane sugar industry was shown in its entirety, and proved one of the most entertaining exhibits in the building. Hardly second to it was the presentation of the beet sugar industry in the United States. This also was treated most elaborately, so that the visitor had ample opportunity for seeing the sugars made from cane and from beets; to compare them and the methods for producing them.

TOBACCO IN MANY FORMS.

The space allotted to the special tobacco exhibit comprised four blocks in the central bay and contained approximately 20,000 feet of floor space. The plan formulated embraced the most graphic presentation of tobacco in all its phases, from the seed to the finished commercial product, yet undertaken. More than twenty states of the union produce the weed in marketable quantities, and each displayed its variety or type incidental to soil, climate or other condition.

These include what are known as "brights," "burley," "cigar," "sumatra," "perique," "smokers," "chewers," and what not. For marketing purposes, these are subdivided into "grades" and under these grade names were exhibited, so that in one comprehensive exhibit the whole story of tobacco was told to the world. All of the states growing the weed participated in exhibiting the seed, plant bed, field culture, curing process, saleswarehouses, leaf; the tools, implements and appliances used in the cultivation, harvesting and manufacture of the leaf.

DECORATIVE FEATURES IN TOBACCO.

The superstructure was encased in leaf or other prepared forms of tobacco. The central feature consisted of an octagonal base, some forty feet in diameter, supporting the globe, twenty-four feet in diameter, upon which the general geographic divisions of the earth were faithfully portrayed. Surmounting this was the figure of a galleon of the fifteenth and sixteenth century type, constructed of tobacco and symbolic of the first introduction of tobacco in the old world in 1585. The design included several models of the Indian, as it was through him, the original American, that this narcotic was given to soothe the masculine nerves of the civilized world.

In the United States more than a million acres are devoted to the production of the eight hundred and fifty to nine hundred millions of pounds of leaf annually produced. From \$50,000,000 to \$60,000,000 paid to the planters is but a small part of the integral realized for the manufactured and exported stock. The assembling of this vast interest into an "Epitome of Tobacco," and its artistic treatment employed some of the best talent in the country.

PRODUCT OF THE AMERICAN COW.

How many of us realize the enormous value of the products of the cow to this country? Approximately, \$472,000,000 worth of milk, butter and cheese are produced in the United States each year. That sum at least was reported in the last census, and it must not be forgotten that

this climax has been reached by gradual growth, which continues, and the next census will show a handsome increase in these figures.

The problem which confronted the exposition authorities was how to plan an exhibit which would fittingly represent this mighty interest.

The dairy section at the world's fair occupied approximately 30,000 square feet in the Palace of Agriculture. A model creamery, using daily 5,000 pounds of milk, was one of the features illustrating processes and proved of great interest. It was equipped with all the latest butter and cheese-making apparatus of today and was in daily operation. Plate glass enclosed it, permitting visitors to see every stage of the process demonstrated.

SCIENTIFIC TREATMENT OF MILK.

Adjoining the creamery was a model dairy lunch exhibit. Milk, cream, butter and cheese, pure, sweet and fresh, the output of the creamery, could be found here, and purchasers could designate which they wished, sterilized, pasteurized or other.

In connection with the creamery was shown a sanitary milk plant. This also was in daily operation, and demonstrated that pure milk may be furnished in cities as well as on the farm. The best way for shipping milk, the best containers, and the proper way to handle it were also shown.

The process of pasteurizing milk was shown; where the milk was run through a series of utensils subjecting it to a heat of 160 degrees, when it was immediately cooled and restored to its normal temperature. This heat is sufficient to destroy most of the injurious germs that may be in the milk, yet does not impair its nutrition. The sterilized milk is heated to the boiling point for a time to destroy other germs should they be present.

SCULPTURE IN BUTTER AND CHEESE.

Few exhibits were of greater general interest than the lavish display of butter and cheese. Here refrigeration was necessary and show cases were provided for the states and foreign countries that participated. The refrigerated cases were 90 feet long and 35 feet wide, of plate glass construction and the divisions eight feet square. The products of the dairy and creamery were displayed more attractively than was ever before attempted and consisted of figures of eminent persons, interesting

objects and other forms of sculpture, including flowers and fruits all done in butter.

Cases of like dimensions were cooled for the cheese exhibits, which included not only all forms manufactured in the United States, but many foreign examples rarely seen in this country.

The famous Roquefort Cheese Company had an exhibit in this department. In a large glass pavilion was a miniature plastic representation of the mountain on which the goats feed, with the animals themselves, the machinery with which the cheese is made, and the historic cellars where it is stored. Another exhibit in this section was the olive oil exhibit of James Plognial, of France. An olive tree containing 1,000 incandescent electric lights was a part of this display.

FOOD AND FOOD PRODUCTS.

More than three acres of space was devoted exclusively to foods, including the cereals and their products; tubers and roots and their products; coffees, teas, cocoa of all kinds and products; refrigerated fresh meats, poultry, fish and game; eggs, farinaceous products, pastes, breads, cakes, tinned meats, evaporated and preserved fruits, spices and condiments; portable waters, beers, ales, wines, brandies, whiskies, cordials and everything else used as food or drink by mankind.

Three acres of everything that is good to eat and drink! And the best part of it was that the visitor was invited to sample the dainty viands, or wholesome beverages, and satisfy himself as to their merits.

Chief Taylor appointed Paul Pierce to superintend this food exhibit, the first of a universal scope ever to be made. Mr. Pierce is a son of the late United States Senator Pierce, of North Dakota, and for ten years has been editor and publisher of a journal devoted to the interests of pure foods.

A GRAND FREE LUNCH.

Space for this attractive exhibit was assigned in the central nave of the Agriculture building. One of the most appetizing exposition displays ever contemplated was shown every day of the fair.

Not only were the foods of the world shown, but each exhibitor gave demonstrations of the qualities of his wares. Thus the breakfast food manufacturers were not content with showing a pyramid of packages, and their food in bulk, but neatly clad girls prepared and served all the dainty dishes of which breakfast food is the principal ingredient. Bak-

ing powder manufacturers employed experts who served the lightest and fluffiest of biscuits, and in order to make them in greater demand served them with the best creamery butter and syrup of fruit.

The fruit preservers and the pickle manufacturers took large blocks of space and displayed several hundred varieties that the world's fair visitor might select samples from at will.

The chocolate and cocoa interests made a great bid for popularity. A cup of rich chocolate, and any of the toothsome desserts of which the products of the chocolate bean form a component part, were served in its most enticing form, while the one who prefers cocoa might have his want supplied for the mere suggestion.

If the housewife observed keenly the tricks of the experts who made the delicious coffees that were served from the artistic booths she must learn much of the art of coffee-making. And as for tea, the growers from all climes exerted their best efforts to prove that their tea had the most delightful flavor.

And so it was all down the line of edibles. The same thing was true of soft drinkables.

WORLD'S LARGEST WINE CASK.

In this connection was shown the largest wine cask ever made. It was in the cooperage exhibit of Adolphe Fruhinsholz in the Palace of Agriculture. It was 17½ feet in diameter and 17½ feet long, and held 14,300 gallons. It was made entirely of oak, the wood being from Mississippi, Kentucky and Tennessee. The staves of the cask were five inches thick. Experienced coopers were brought from Nancy, France, to construct the cask.

AGRICULTURAL IMPLEMENTS, TOOLS, ETC.

Another great block of space was supplied for the manufacturers of agricultural implements, tools and machinery. All the newest and latest devices for the tilling of the soil or the handling of farm products were lavishly displayed.

The many millions of dollars invested in the production of implements used in the various processes of agriculture, raise that section to such an importance that it seemed to the management unfair to ask the manufacturers to be content with an annex, a lean-to or a subsidiary place of any sort. Plans were accordingly made to give agricultural implements a location on the same floor and under the same roof, with

every facility afforded other exhibitors in this department of the exposition. With these arrangements supplied by the management the exhibitors felt warranted in installing upon a higher and more artistic plane than has ever heretofore been practicable, giving the agriculturalist a rare opportunity to study the implements and labor-saving devices of his calling.

SOME OUTDOOR EXHIBITS.

Windmills were accorded locations outside the building so that they might be shown in actual service. Outdoor locations were also provided for such massive agricultural machinery and engines as required such a position in order that they might properly present their special qualities to the critical visitor.

Space was also provided outside for such live crop exhibits as were necessary to give an adequate illustration of the methods of growing, fertilizing, cultivating and harvesting of crops, and to illustrate species and varieties of grains.

HALL FOR FARMERS' MEETINGS.

There was also in the Palace of Agriculture a hall 50x106 feet, containing seating capacity to accommodate comfortably over a thousand people. This hall was constructed for the special purpose of providing a meeting place for all international, national, state and other agricultural and horticultural organizations which held their meetings in St. Louis in 1904. The use of the hall was without charge.

A MAP IN LIVING VEGETATION.

Typifying the agricultural resources of each state, a large map, covering six acres, with cinder walks marking the boundary lines, showed visitors at the world's fair the growing crops of the nation as they are adapted to the various sections.

Texas, with its enormous area, was represented with cotton through the central section, corn and wheat in the northern part of the state, range grass in the cattle belt and rice fields along the southern coast. Missouri was outlined by the crops common to her soil and blue grass was one of the products to show the topography of Kentucky.

Every state in the union was similarly marked. This was one of the most comprehensive features of the government's agricultural display.

In addition to the numerous features mentioned, there was much of

great interest in the foreign section, where England, France, Germany, Italy, Japan, Mexico, Canada, Egypt, Africa and other countries and islands of the sea vied with each other in showing to the New, the husbandry of the Old World.

MOTHER EARTH THE SOURCE OF LIFE AND LUXURY.

The last exhibit could not but strengthen the impression, carried away by the visitor to the Palace of Agriculture, that Mother Earth, after all, is the real source of all we are, and can substantially enjoy in this life. She is our safest dependence for both subsistence and luxury; for what are drought, flood and hurricane, when weighed against the fluctuations, uncertainties and wrecks of the industrial and business world?

A DIGNIFIED PROFESSION.

Agriculture has equally advanced with Mining, the Manufactures and Commerce. Science and invention have added as much to the possibilities for expansion in this field as in any other of the human activities. The modern and successful agriculturist is as active mentally as he is physically, since in order to meet competition he must keep abreast of all the latest improvements in machinery, renewal of the soil and rotation of crops. In certain directions he should be, and often is, a practical chemist, knowing what elements to add to defective soils in order to best grow certain crops, or by the analysis of the soil being able to determine what crop will best flourish.

The display in the Palace of Agriculture clearly illustrated the dignity of the farmer's calling. It is not an occupation to be trifled with, if success is anticipated.

CHAPTER XVII.

THE PALACE OF HORTICULTURE

Exhibitors Received Individual Credit—The Pomological Exhibit—Almost Perfect Interior Arrangements—Remarkable Apple Display—Tasting Countless Apples—A Peculiar Occupation—Collective Fruit Exhibit—Horticultural Machinery—Floral Exhibits.

THE Palace of Horticulture consisted of a main central room four hundred feet square, with wings extending on opposite sides, each wing being 204 by 230 feet, the whole building thus covering almost exactly six acres of ground. Every foot of the great area was first-class exhibit space and no display was located on any but main-floor space. A further actual gain in the amount of available space was made through the policy followed in the classification by which all wines and brandies, preserved and canned fruit were classified in agriculture with other liquors and food products. The actual net space for exhibits was thus much more than was ever provided for horticultural exhibits at any exposition.

In the center of the building was a splendid collection of palms and decorative plants. Surrounding this, an area of two hundred feet square, was reserved for exhibits placed upon low tables. No installation in this space was more than thirty inches in height.

The building was lighted by windows in the walls and from above. The windows in the roof were not skylights but of the monitor form, so that no direct rays of sunshine from them touched the exhibits.

EXHIBITORS RECEIVED INDIVIDUAL CREDIT.

All exhibits were shown with the name and address of the producer attached, though the space may have been assigned to a National or State commission. The value of a rule of this kind is quite evident. The grower was given due credit for all the fruit furnished by him and the exhibits were of greater educational value because the exact location where the fruit was grown was given.

Several reasons exist to explain why the exhibits in fresh fruits 231

were much better than it has heretofore been possible to make. Chief among these is the enormous advance that has been made in knowledge regarding refrigeration as a means of preserving for long periods the perishable fruits. Another reason is that St. Louis is now the center of the greatest apple, peach, grape and strawberry producing section of the world. This made possible the bringing together, from comparatively nearby territory, of great quantities of fruits of the highest quality and in a most varied assortment.

THE POMOLOGICAL EXHIBIT.

The space devoted to Pomological exhibits was located in the main room of the Horticultural building. This space, as already stated, was much larger than has ever been devoted to a fruit exhibit at any exposition, and it had the advantage of being in one large square room. The floor plan adopted was so arranged that there were no main aisles in the building, but instead it was cut up in such a way that the aisles ran in different directions; this arrangement making the entire area good exhibit space, because it distributed the visitors evenly over the entire space, and created no favored locations. This entire area was covered with fresh fruit on the opening day of the exposition, which is something never attempted before at any world's fair.

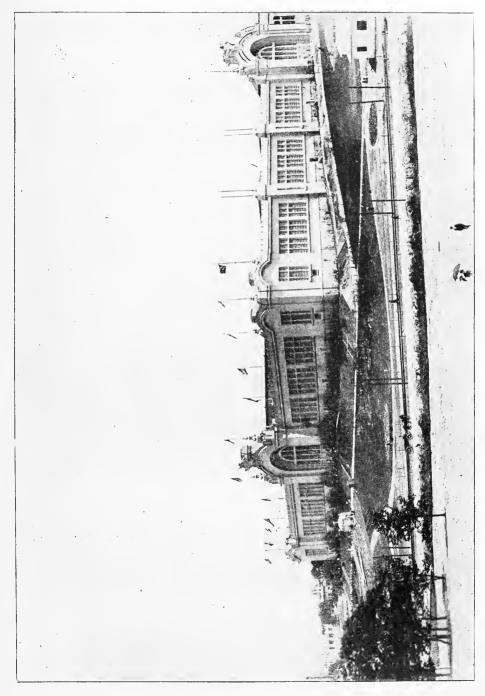
ALMOST PERFECT INTERIOR ARRANGEMENTS.

The central portion of the building, covering a space of forty thousand square feet, was devoted to table exhibits. This arrangement enabled the visitor to locate any exhibit in the building from almost any point near the center, and also enabled him to get a splendid general view. The space surrounding this center area was covered with high installation, and the different states and territories being allowed to put up such installation as best suited their needs.

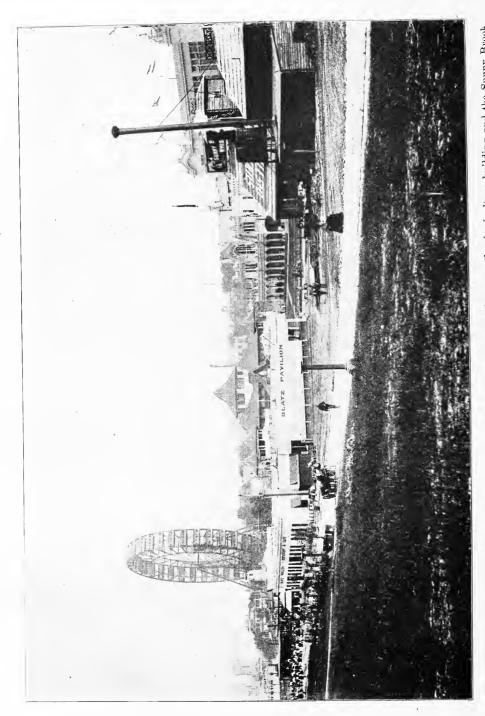
The different states and territories that participated made extensive preparations in the way of putting large quantities of fruit in cold storage in St. Louis and elsewhere, sufficient in all cases to enable them to keep up a continuous fruit exhibit until the crop of 1904 was available for exhibit purposes.

REMARKABLE APPLE DISPLAY.

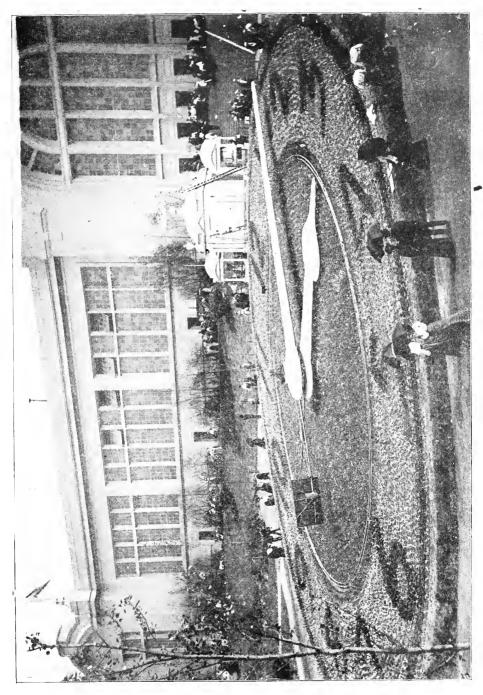
The fruit exhibit for the early part of the season was necessarily largely an apple exhibit, because other fruits are not so successfully



PALACE OF AGRICULTURE—The Palace of Agriculture covered twenty acres of ground and was the largest structure erected by the Louisiana Purchase Exposition. Despite this generous allotment of space, a building of twice this size would scarcely have met the requirements of would-be exhibitors. Building and exhibits were impressively substantial, the six-acre map of growing crops of the United States being one of the great exposition features.



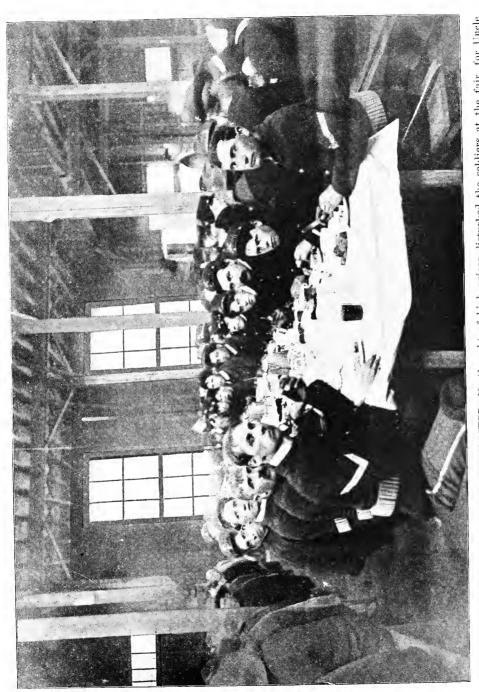
VIEW FROM EASTERN PORTION OF GROUNDS—From a position near the Agriculture building and the Sunny Brook. Distillery, which are seen to the extreme right of the illustration, the spectator is looking west. The main objects, as his eye glances to the left, are Canada's homelike pavilion, Ceylon's headquarters and tea-house, the familiar Ferris Wheel and in the farthest distance the towers of the Machinery building.



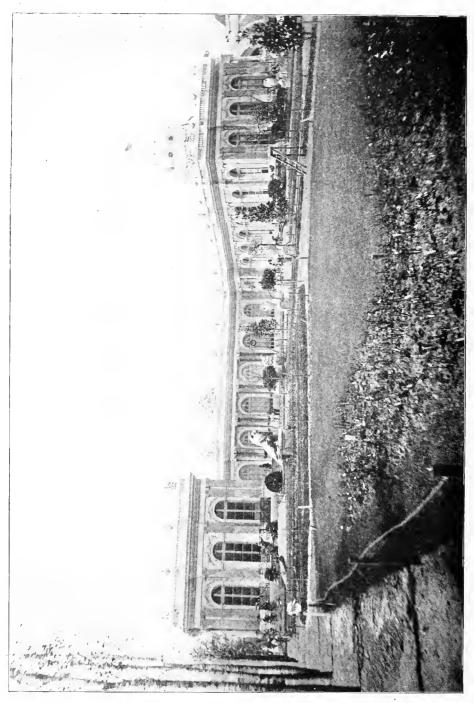
THE GREAT FLORAL CLOCK—Surrounding the palaces of Agriculture and Horticulture was a fifty-acre tract of land laid out in beautiful gardens of plants, bulls and flowers. These attractions embraced the so-called outside exhibits of horticulture. A great clock in front of the Agricultural building was composed of a charming variety of flowers, the figures plainly designated, and the gigantic hands being worked by machinery.



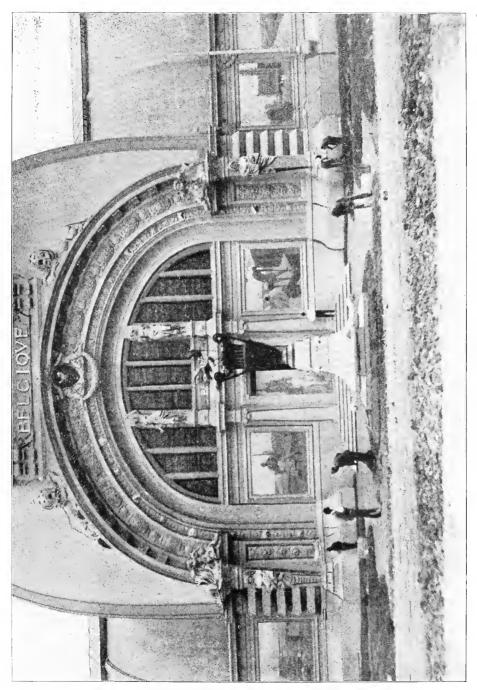
MISS GOULD'S AUTOMOSILE AT THE FAIR—Helen Gould, treasurer of the Board of Lady Managers of the Louisiana Purchase Exposition, daughter and heiress to the millions of the late Jay Gould, was an important factor at the great show. This vehicle was used by her in speeding about to attend to business and social and official functions.



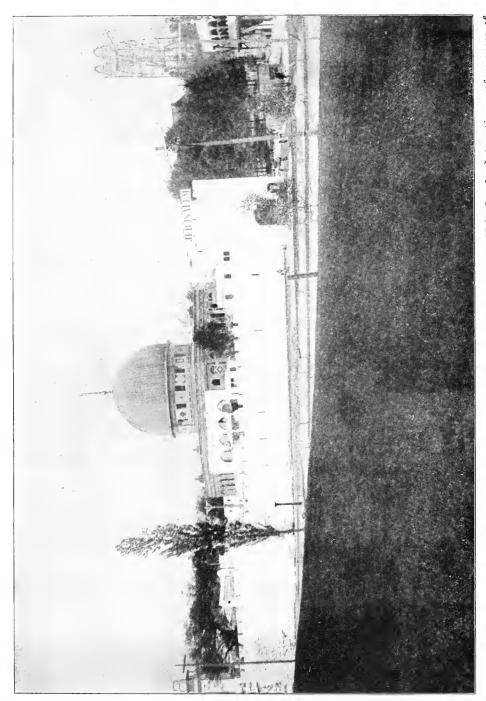
UNITED STATES INFANTEYMEN AT MESS—No thought of high prices disturbed the soldiers at the fair, for Uncle Sam proved a liberal provider and operated his numerous big "boarding houses" with a lavish hand. Army men assigned to duty at the exposition regarded the allotment as a rare treat and entered upon their duties with enthusiasm.



FAIR HEADQUARTERS OF THE FRENCH REPUBLIC—The French building, with the surrounding grounds adorned with gems of statuary and landscape architecture, was one of the most artistic creations of the exposition. The structure itself was simple, yet elegant, light and cheerful. Viewed from the northwest, as in the above illustration, the graceful dome of Brazil's headquarters appears over a corner of the building.



more admiration than the magnificent building representing Belgium, occupying a commanding position at the base of the hill capped by the Administration building. Belgium's home at the exposition was a fitting introduction to the glories awaiting the visitor who pursued his steps further. BELGIUM'S FINE BUILDING-Although there were many larger structures at the fair, there were few that attracted



JERUSALEM—Here we have the exterior of a colossal reproduction from the Holy Land. Interesting performances of a semi-religious and historical nature took place daily within the enclosure, and souvenirs from Jerusalem were sold from stalls similar to those in the ancient city. The Ferris wheel appears in the background.

kept in cold storage. For that reason the fruit exhibit was of great interest, because it enabled the different States to show the quality of their apples from a commercial standpoint, since the keeping qualities of the fruit, in and out of cold storage, is an interesting point when considered from the commercial side. The situation enabled exhibitors from widely separated localities to compare the keeping qualities of their fruits with others when placed side by side on the exhibit tables.

TESTING COUNTLESS APPLES.

W. N. Irwin, Assistant Pomologist of the Department of Agriculture, who was in charge of the Pomological display at the world's fair, is the official apple taster of the United States government, and not only does he taste the apples, but describes the taste for the department.

Distinguishing among three thousand new varieties of apples, each with its own taste, formed part of Mr. Irwin's work during the year preceding the fair. Apples sent to the department go directly to him, and after noting their color, size and outward aspect, he bites into them and then describes their taste.

Tea and wine tasters are known who can by one sip tell the year of a wine or the province where the tea was grown, but none of them has so delicate a taste as the official apple taster, who takes a bite of the apple and after rolling the morsel about under his tongue, can sit down and describe it so that it can be entered on the fruit book of the department as having not only a color and size, but a definite taste, different from that of all other apples.

A PECULIAR OCCUPATION.

For the description of tastes Mr. Irwin has the largest vocabulary of any man in the world. This is necessary, for he must describe the distinguishing taste of apples and know where to draw the line between the thousands of varieties. In his descriptions he compares the apple under consideration with others of well known varieties and definitely places its usefulness as an article of food.

One apple he will describe as good for pies, but not especially suited for apple sauce, while another will be rated as a fine eating apple.

During the twelve years that he has spent in the Department of Agriculture, Mr. Irwin has tasted upwards of 30,000 species of fruit.

Not only apples but peaches and pears in great variety and all the host of berries.

It is rumored in the department that Mr. Irwin can taste an apple with his eyes blindfolded and tell the variety, much as the Nantucket sea captain could tell the location of his ship from the quality of mud brought up by the tallowed lead. He would not verify this statement except to say that a man who does the same thing for twelve years ought to get skillful at it. During the exposition this official apple taster had occasion to test thousands and thousands of apples in the manner described.

COLLECTIVE FRUIT EXHIBIT.

The Southern States had fresh fruits from the fields on the tables soon after the exposition opened, some having large exhibits of strawberries on the opening day.

In addition to the exhibits made by the different States, the Department of Horticulture maintained a collective fruit exhibit. This exhibit was made for the purpose of getting together in one space, different varieties of fruits grown in widely separated localities. In this collection were brought together specimens of leading varieties of fruits from all countries and States. This was done in order to afford an opportunity for those interested in studying varieties to compare specimens of the same variety from all sections of the country and to note variation as to size, color, shape, texture of flesh and flavor. For the benefit of exhibitors all the cold storage houses in St. Louis quoted a uniform charge for storing fruit of fifteen cents per barrel for the first month and ten cents per month thereafter, or fifty cents per barrel for the preparatory season, from October to May.

HORTICULTURAL MACHINERY.

At no previous exposition had the exhibition of horticultural machinery, as such, been made a feature, but here horticultural machinery of all kinds was shown in the Implement room of the Horticultural building. Formerly horticultural machinery was shown as a part of the agricultural machinery exhibit.

At the present time, in the central and western States, horticulture is making such rapid strides that there is a demand, on the part of fruit growers, for the best horticultural implements and appliances. In the Horticulture Implement room, complete exhibits of every description

of implements, including the different machines manufactured for orchard cultivation, and the different kinds of apparatus used by fruit growers in preventing injury to fruits from fungous diseases and insects, met this demand.

There has been considerable advancement made during the last few years in the manufacturing of apparatus of this kind, and it was reflected in a large number of interesting exhibits of the different makes of machines in this class. The exhibit also included all kinds of tools used by gardeners and nurserymen. Lawn mowers, garden rollers, and watering apparatus were shown in use on the forty acres of outside space under the control of the Department of Horticulture.

FLORAL EXHIBITS.

The outside horticultural exhibits were located on Agriculture Hill, on a fifty acre tract of land surrounding the Agriculture and Horticulture Palaces. The location was one well suited to the purpose, as it possessed the necessary slopes and depressions to allow of the best arrangement of the flower beds and aquatic basins and groups of shrubs.

In less than six months this space was transformed from a rough unsightly ridge into a splendidly laid out system of landscape gardens surrounding the two Palaces.

The exhibits were made by the leading nurserymen and seedsmen of the country and covered a large variety of trees, plants, flowers and bulbs. There were planted in this area over 17,000 roses and 100,000 bulbs.

The lakes for the exhibit of aquatic plants covered an area of more than two acres, and in them were shown the rarest and most beautiful specimens in existence.

Over twenty-five acres were planted in grasses, which varied from the darker greens to the lighter hues of the far-famed Kentucky blue grass.

Never in the history of the world has any royal palace been surrounded by such a wealth and profusion of beautiful flowers as made poetic the approaches to the home of the American agriculturist and horticulturist, the Palaces of Agriculture and Horticulture of the Louisiana Purchase Exposition.

APPLES AND GRAPES OF THE LOUISIANA PURCHASE TERRITORY.

The profuse displays of fruit, especially of apples, showed how the most prolific districts for these products of the soil have to a great extent shifted from the northeastern regions of the United States to the territory formerly covered by the Louisiana Purchase. Missouri, Kansas, Nebraska and Idaho can now even gladden the heart of the York State man, who fifty years ago would have refused to believe that any soil but that of his native commonwealth could bear an edible apple. The display of grapes from the southwestern states was also a revelation, as it was in a lesser degree at the World's Columbian Exposition.

THE SUCCESSFUL MASTER OF DETAILS.

A successful horticulturist must be a master of details. Although the farmer of to-day leaves the fewest things possible to chance, he is more a wholesale manipulator of the soil than the horticulturist. The latter carefully examines each tree in his orchard and each plant in his garden, on the lookout for pests and disease, and after the fruit and berries are matured he continues his oversight like a careful father. In order to produce the best results he must be a master of details, and the exhibits in the Palace of Horticulture not only showed the finished work but indicated the most advanced processes and mechanisms by which his labors might be lightened and at the same time made more effective.

CHAPTER XVIII.

FORESTRY, FISH AND GAME

The Display of Fish and Game—The Building Described—Live Fish and Their Aquarium—Primitive and Improved Hunting Weapons—Fish and Game Resources of the United States—Illustrating Unlawful Ways of Fishing—Alaska Packing Company's Clever Exhibit—Dr. Tarleton H. Bean, Chief of Department—The Government Live Fish Display—Fish History by the United States Government—Venerable and Pathetic Sturgeon—Rainbow, Speckled and Mountain Trout—Gold Fish and Other Aristocrats—Pig, Pin and Other Freak Fish—Department of Forestry—Economic Uses of Valuable Trees—Indoor and Outdoor Exhibits of Forestry—Tree Planting for Farmers—Genuine New Jersey Mosquito Exhibit.

HE odor of rare woods and sweet scented barks lent an enchanting welcome to the cool interior of the Forestry, Fish and Game building, for which the Jefferson Guard at the door made the proud boast that no other building of the kind at any previous exposition was so complete.

Unique designs were ingeniously worked out by various state and foreign decorators. Kentucky, Tennessee and Arkansas were states to the front with displays of native woods, everything from pine cones to saw logs, from bark to washtubs, being used to advantage in adornment. The variety and richness of coloring were as great as that of distinctive odor. The dainty fragrance of woods from far-away Japan mingled pleasingly with that of Canada's spruce and fir, the teakwood of the South Sea with the familiar walnut and pine.

THE DISPLAY OF FISH AND GAME.

As appropriate companion displays those of game animals interested the visitor. Attractive collections of birds, fur-bearing animals, deer, elk and moose heads, together with set pieces and groups illustrating the art of the taxidermist, were to be seen on every side.

Artificial pools and running brooks abounded with fish, and rows of aquariums were conveniently placed for study and inspection, arranged in the Fisheries wing of the building. Here the finny products of the different states and countries were shown in distinct displays, including mounted specimens, pictures, and the nets and paraphernalia of angling.

THE BUILDING DESCRIBED.

The Department of Fish and Game was associated with the Forestry Department in a building 300 feet wide and 600 feet long, universally regarded as the best building ever constructed at an international exposition for the purpose for which it was designed. Its location was admirable, and scarcely a single class of the entire department was lacking in full representation by means of worthy exhibits.

A characteristic feature of this building was its central nave, 85 feet wide and 430 feet long, entirely free of posts, and so well lighted that no display was in the least obscure to visitors. The east and west ends of the building were also 85 feet wide, 300 feet long, and free of posts.

THE LIVE FISH AND THEIR AQUARIUM.

The chief interest in this department undoubtedly centered in its live fish and game, which were displayed by a number of States, as well as by private individuals.

The aquarium, located in the east end of the building, occupied a space 190 feet long and 35 feet wide. It had two lines of tanks, separated by an aisle 15 feet wide. This wide aisle communicated through an illuminated grotto with the aquarium of one of the States in which was displayed black bass, pike-perch, crappie, rainbow trout, and other well-known food and game fishes. A pool occupying the center of the space in this State exhibit contained immense catfishes and other characteristic species. The west wall was handsomely decorated to represent the forest and its game.

The nave contained two pools for the display of live beaver, which were shown in their natural surroundings, engaged in their characteristic work of tree cutting.

The central pool, 40 feet in diameter, and five feet deep, provided for a State display of marine fishes.

Groups of living game birds, suitable for display indoors, added materially to the attractiveness of this building, and the live fish and game were supplemented by the choicest collections of the best art of the taxidermist.

Every class of the Fish and Game Department was fully covered by domestic as well as foreign exhibits, and these displays included a range of country from the Atlantic to the Pacific, and from Alaska and Canada to the Gulf of Mexico.

PRIMITIVE AND IMPROVED HUNTING WEAPONS.

The displays of hunting equipment from foreign countries were unusually complete and interesting. They included native weapons, as well as the best equipment of the modern hunter. The various implements employed by sportsmen, decoys, gun cabinets, tents, camping and hunting utensils, etc., were shown in great variety.

Among the illustrations shown were oil paintings, photographs and drawings, while in taxidermy, furs, game trophies, products of hunting and fishing, literature, fishing equipment of all kinds, such as native appliances, modern netting, fishery rigged boats, artificial flies, reels, and all other tackle. The exhibits were the most nearly complete and most attractive of any that have ever been assembled at a great exposition.

To give a good idea of the extent of the participation in this department, it is sufficient to say that a single country had 300 exhibitors, and another foreign country had nearly 9,000 separate items forming its collections.

FISH AND GAME RESOURCES OF THE UNITED STATES.

Many of the States showed their fish and game resources, most of them by means of mounted specimens and groups, but several of them supplemented taxidermy by living game. The great salmon fishery of the Pacific Coast, and the methods of hatching salmon, were illustrated in the most comprehensive and vivid manner. The methods of fish culture and its results, formed principal items of the displays of several States.

If old Izaak Walton could have been brought back to life and taken to the world's fair he would have spent all of his time in the Fish, Forestry and Game and the Government Fish buildings. In these two structures he would have seen about every kind of fish known to man—some of them being in life and some of them in models, and still others as they have come from the taxidermists.

In the Fish and Forestry building there were miles of pictures of fish and fishing streams, and groups and groups of fish as they came from the taxidermist, but comparatively few exhibits of the actual living, breathing, swimming fish. This latter display was in the Government building, and in that structure the lover of the sport could find an almost endless array of the finny tribe to interest him.

In the Fish and Forestry building Pennsylvania and several other States made extensive exhibits of unusual interest, particularly Pennsyl-This State had the tanks filled with the live fish, aside from pictures of streams where they live and flourish and meet their fate, and it had also an extensive collection of taxidermy fish.

ILLUSTRATING UNLAWFUL WAYS OF FISHING.

One of the State's interesting displays was of nets, hooks and the like that are used contrary to the laws of the State and which had been confiscated. This display included the deadly stick of dynamite which desperadoes explode in streams. The use of dynamite, be it understood. is strictly forbidden in every State in the Union, but there are always men who use this means of capturing fish just as there are men who will murder oneanother despite the laws.

ALASKA PACKING COMPANY'S CLEVER EXHIBIT.

To the extreme south of the Palace of Forestry, Fish and Game, the Alaska Packing Company had a remarkable exhibit installed. With a painted background showing the port of Tacoma, a clever mechanical arrangement showed real water coursing down from the foothills into the bay. Lively trout and salmon disported themselves in this real stream of water, and every department of the packing industry of the Northwest was shown in miniature.

DR. TARLETON H. BEAN, CHIEF OF THE DEPARTMENT.

This interesting department at the Louisiana Purchase Exposition— Fish and Game-was under the direction of an able chief, Dr. Tarleton H. Bean. Dr. Bean is a native of Pennsylvania. He was graduated from the State Normal School, Millersville, Pa., in 1866, and received the degree of Doctor of Medicine at the Columbian University, Washington, D. C., in 1876. In 1883 the honorary degree of Master of Science was conferred upon him by the Indiana University, in appreciation of his original publication upon ornithology and ichthyology.

In 1900 he was elected a foreign corresponding member of the Danish Fisheries Society. In 1901 he was decorated by France with the order of Chevalier of the Legion of Honor, in appreciation of services rendered to the Paris Exposition, in 1900, while performing the duties of Director of Forestry and Fisheries for the Commissioner General of the

United States.

When a young man, Dr. Bean was a law student in Missouri, while engaged in teaching in the public schools. He has devoted nine years to the profession of teaching.

In 1874 he became an assistant to the United States Commissioner of Fish and Fisheries, and took up his residence at Washington, D. C., where he remained in the service of the United States Government until 1895. He was appointed Curator of the Department of Fishes in the United States National Museum, at Washington, in 1878. In the same year he became editor of the Proceedings and Bulletins of that museum. In 1888 he was editorially associated with the Forest and Stream, of New York City. In 1890 he was appointed editor and ichthyologist of the United States Fish Commission, and Honorary Curator of Fishes in the National Museum. In 1892 he became assistant in charge of the Division of Fish Culture in the United States Fish Commission, and representative of that commission on the Government Board at the World's Columbian Exposition, of 1893. In 1894 he was again appointed representative of the United States Fish Commission, on the Government Board, at the Atlanta exposition.

In 1895 he became the Director of the Aquarium at New York City, and rebuilt that world-famous establishment. In 1899 he was appointed Director of Forestry and Fisheries, for the United States Commissioner General, to the Paris Exposition of 1900. On January 1, 1902, he was appointed Chief of the Department of Fish and Game, of the Universal Exposition, at St. Louis.

THE GOVERNMENT LIVE-FISH DISPLAY.

Before leaving the subject of fish let us step over to the government display and revel in the presence of real, live fish. Here it was that oddities of the deep were gathered. For the benefit of the man whose wildest sport with the rod has been along the banks of some inland stream, or some placid lake, and for those urban dwellers who know absolutely nothing of the finny inhabitants of the world, there were large framed descriptions of the occupants of the tanks placed above each tank. These descriptions were a wonderful aid to the seeker for fish lore, as they gave not only the name of the fish, but its habitat.

The Government always does everything thoroughly, and it did not neglect its duty with these fish. That is, it gave all the information that you would care to know in those little framed descriptions, and the result was that after a tour of the exhibit one departed with a pretty good idea of the fish in American streams, lakes, oceans and bodies of water, generally speaking.

FISH HISTORY, BY THE U. S. GOVERNMENT.

As stated, the Government fish exhibit was particularly interesting because of this thoroughness. There was not anything that was overlooked. If you cared to do so you could follow the fish from its inception to its life. There was a complete expose of the hatching process that the Government carries out in the various hatcheries, and, therefore, you could follow the modus operandi of the fish, observing it in its egg or spawn condition and gradually tracing it along to the time that it got into one of the big tanks. When it gets into the tank, be it borne in mind, it is perfectly able to take care of itself. It is this comprehensive knowledge of the fish in its life from birth to its end that made the Government exhibit fascinating to one who is a lover of piscatorial sport.

VENERABLE AND PATHETIC STURGEON.

The sturgeon common to Lake Erie and the Delaware river is one of the oldest of fish. It is a survivor of the Devonian age, and the Government had this old inhabitant shown. It is valuable as food, but constant raids upon it are causing it to disappear. It is an example of the pathetic in piscatorial lore that its species has survived for ages and yet it is to disappear as the world becomes more and more civilized. It is one of the largest of fish.

Grass pike, with their long, narrow heads and silvery color, are a good fish that attracted considerable attention. Bass of every variety were shown. The large-mouth bass is considered by many epicures as the premier fish food. It is common from the Atlantic to Minnesota, and south to Texas, and has been successfully hatched and raised without this area; but this is its habitat, and it is quite common to all streams therein.

EXTENSIVE EXHIBIT OF TROUT.

The exhibit of trout was very extensive. There was shown the small trout as long as your hand, commonly known as "mountain," and a dweller in the streams of the mountains of the country. There is practically no native trout anywhere, the fish caught in Colorado, Wyoming,

Utah, Idaho, Montana and other mountainous States being planted in the streams by the State or Government hatcheries. However, this fact does not lessen its gameness.

RAINBOW, SPECKLED AND MOUNTAIN VARIETIES.

The rainbow with his variegated colors and his brilliant belly and the speckled beauties (rightly named, for with their pink and black and yellow and scarlet spots they are truly beautiful) and other varieties of the smaller trout were exhibited. There was also shown the big rainbow that you get in the Gunnison river, Colorado, weighing as high as ten and twelve pounds and which to land taxes the skill of the most expert of anglers.

In addition to these mountain trout there was a splendid showing of lake trout—big fellows that give you a battle for life (or death, rather) common to the Great Lakes and to practically every lake in the United States north of the Mason and Dixon line.

The mountain trout is the most delicious of known fish, in the opinion of experts. It is barren of small bones, so that in eating one lifts the rich meat directly from its body, and one isn't bothered with numerous small bones. The lake trout, on the other hand, has those bones that require time to dispose of, so that in dissecting it you are likely to be late if you make an engagement for 1 o'clock and you sit down to the meal at noon.

THE CHEERFUL CODFISH.

The cheerful codfish was also to be seen. This is one of the most familiar of fish, and it may not prove disappointing to those who board to know that it is disappearing so that it now ranks as one of the most important instead of one of the most despised. While you have to suffer from meals of codfish your grandchildren will consider it a delicacy. The mackerel, another familiar fish, was also shown.

Pickerel, pike, perch and a score of varieties of food fish were in the exhibit, most of which are pretty well known. These fish are not of the boneless variety, as you well know, but they are desirable as food and their habitat is the streams of practically the entire United States. These are the fish that you catch with rod and line, and, while, perhaps they cannot give you the fight of, say a bass or a trout, they are game fish.

The huge muscalonge from the Lake Superior region were shown.

These are as large as a 12-year-old boy, and to land one of them requires great skill. They are also found in northern Lake Michigan, and in some of the Wisconsin lakes, and to land one is considered sufficient achievement in the lifetime of any angler.

GREAT WHITEFISH, HALIBUT AND SHEEPHEAD.

There was also the large whitefish, named for his color, with which Lake Erie once swarmed, but which is becoming scarcer and scarcer owing to the scores of fishing firms that are constantly raiding the lake for it. It is one of the finest of food fishes. The rainbow halibut, another famous food fish, attracted crowds like a popular matinee. It is pink striped and "gorgeously decorated," as a woman expressed it. Aside from being a prize food fish it is a show fish and one of the most beautiful of the finny tribe.

The sheephead fish is another "showy" fish that had its full quota of admirers. It is flat and has black stripes like a zebra and silver scales with heavy fins and flappers. An awkward fish, apparently, but one of the most graceful in action. The triggers, with their narrow bodies and large fins, with a fin as a propeller, also attracted attention of those looking for the curious in the water kingdom.

GOLD FISH AND OTHER ARISTOCRATS.

The palm would have gone to the gold fish if there had been one to be given by the women visitors at the Government Fish building. There you could see these little fellows in jars, including the Japanese variety, about as big as a man's middle finger, and which cost from \$2 to \$7 each, and are as delicate as a morning glory, and up to the golden ide, gold tench and other aristocratic fish. Their brilliantly golden bodies and their grace made them the center of attraction. The golden ide and golden tench are as large as black bass and their coloring is as the sunset.

These golden fish are not much for the table. They are the fish that are placed in the larger aquariums and are without doubt the most beautiful of the inhabitants of water. In water their bodies have the changing colors of a sunset and for this reason one in watching them can see them apparently change their shadings, but it is only the reflections.

YOUR OLD FRIENDS, THE CAT FISH AND BLACK BASS.

Near these golden beauties you could see your old friend, the Mississippi River Cat. It was just the same as those that you used to catch as a boy in the Father of Waters and cook over a driftwood fire. This old reliable food fish does not decrease in numbers, and is still waiting for the willow pole and the old-time line and the hook baited with an angleworm.

It had a neighbor—the black bass. When the average man looks at a black bass he thinks of the rocky place in which it usually lies and the exciting sport of landing it. Then he sees it all nicely baked in its entirety, and he can almost see it smiling at him, knowing full well that he'll have to search a long way before it can be hooked.

The redsnapper, another succulent fish that causes the mouth to water and makes you feel in your pocket and count the change, was near by.

Carp and various other familiar fish were shown in the tanks, so that one fond of the sport would become restless to think he didn't go fishing instead of to the world's fair.

PIG, PIN AND OTHER FREAK FISH.

There were freak fish, the name of which you would never know were it not for the framed descriptions above the tanks. For instance, there was a pigfish, flat and about five inches in length, with silvery scales, and adjoining was the pinfish, of the same general style of architecture, but smaller. You could find turtles, some of which you caught in your younger days, and some of them unknown to the average man. There were river and deep-sea turtles, meaning thereby that some of them were the size of a boy's hat and others nearly as large as a flat-top office desk.

So much for fish! We are now due to return to the Forestry, Fish and Game building and delve in some of the mysteries of the forest.

DEPARTMENT OF FORESTRY.

The Department of Forestry was associated for exhibit purposes with the Department of Fish and Game in the building already described. The space devoted to forestry was insignificant when we con-

sider the importance of its industries, which are valued at \$1,000,000,000 annually. As a matter of course the building was too small.

This department was also in the hands of Dr. Bean. Nearly all of the great States contributed to the forestry exhibit, as did also a great many important foreign countries; indeed, it was impossible to provide all of the space required for these displays. They were not limited to forest products, but related to forest policy, and to the practical work of tree planting.

The distribution of forests and of the genera and species of trees and plants formed part of the scientific exhibit; also the anatomy and structure of woods, as shown by sections of various degrees of thickness. The diseases of forest trees, the peculiarities of forest growth, statistics of forest industries, and the relation of forests to climate were interesting features of this department.

ECONOMIC USES OF VALUABLE TREES.

A special object of the selected display in the Forestry building was the complete illustration of the economic uses of valuable trees, such as yellow pine, loblolly pine, cedar, cypress, redwood, spruce, hemlock and other coniferous trees, as well as hard woods. The economic history and utilization of these woods was shown in great detail.

The secondary products of the forest, such as woodenware, cooperage, basketry, etc., the great industries based upon wood pulp, and other objects of forest resources, notably alcohol, turpentine, resins, etc., helped to complete the forest installation.

The United States Bureau of Forestry occupied a central large location in the west end of the building, and its display covered almost the whole of the first group of the Forestry Department.

INDOOR AND OUTDOOR EXHIBITS OF FORESTRY.

Its indoor exhibit required 5,000 square feet of floor space in the spacious Forestry and Fish and Game building. This display included as most conspicuous features magnificent large colored and uncolored transparencies, illustrating forest trees, typical natural and planted timber forests, forest conditions, and forest topography in the United States. The various typical methods of lumbering were illustrated; also the baleful destruction of forests by fire, insects, and other enemies. The

transparencies showing these features were installed in an artistically constructed arcade, illuminated by natural light.

Other important parts of the indoor exhibit included a full exposition of the character and extent of government forest work in the United States. Special account was taken of methods and results of timber testing, the preservation of railroad and other construction timber by artificial treatment, practical forest management and tree planting on public and private lands, turpentine orcharding and the naval stores industry. Graphic illustrations were given of the origin, yield and consumption of American timbers.

The distribution of type forest in different forest regions, and the location and extent of State and Federal forest reserves were exhibited on a large relief map of the United States.

The outdoor forest display, while simple, was exceedingly important and instructive from educational and practical points of view. It comprised operations in the management of forest and farm woodlands and methods of economic forest tree planting. A timber tract of some ten acres was used to carry demonstrations of the principles and practice of conservative forestry which the bureau is now applying to public and private timber lands.

TREE PLANTING FOR FARMERS.

Demonstrations of the principles and methods of tree planting for profit on farms, denuded and treeless lands, were conducted on a separate tract adjoining the forage and other farm crop exhibits of the United States Bureau of Plant Industry. This tree-planting display showed actual practice in the formation of timber land for farms and was a most instructive lesson to farmers and others interested in tree planting.

So much popular interest has been enlisted in behalf of modern forest management that many of the wealthiest lumbermen of the United States are now practicing the methods of the Forestry Bureau and treating the forest as a perpetual crop.

The forestry section of the Forestry, Fish and Game building not being large enough for all the forestry exhibits entered, a portion of the overflow was exhibited in the House of Hoo-Hoo. The building was 97 by 139 feet. Some twenty lumber firms and associations, several of which are national organizations, made exhibits in the house, showing

the value of lumber for building purposes and interior decoration. Most of them also had exhibits in the Forestry, Fish and Game building.

A GENUINE NEW JERSEY MOSQUITO EXHIBIT.

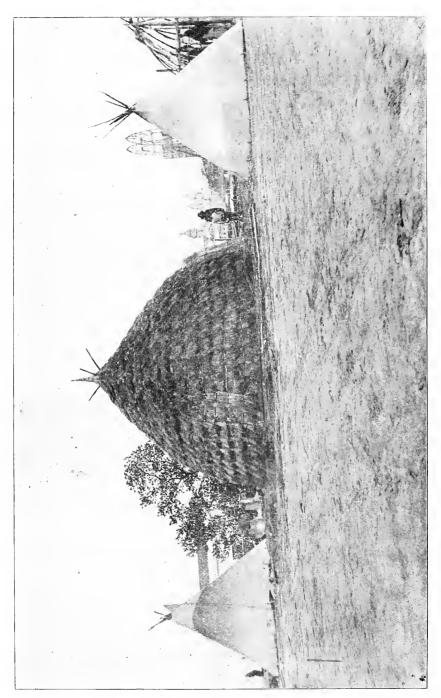
Thousands of genuine New Jersey mosquitoes invaded the Forestry, Fish and Game building, forming a part of the New Jersey section. All of them were killed before they were shipped to St. Louis lest the attendance at the exposition should dwindle when it became known that the ferocious pests, for which New Jersey is famous, would be in evidence.

Several different kinds of mosquitoes were exhibited in glass cases. Some were spotted and some a dull gray without spots. Some specimens were from the salt marshes near the sea coast, where they fatten upon persons from the interior who seek rest and recreation upon the Jersey coast. Others came from the fresh-water pools and streams.

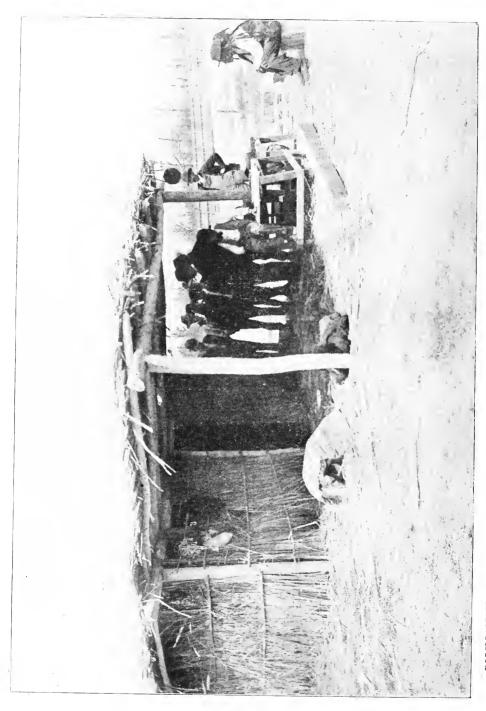
One mosquito photograph was exhibited. It was 18 inches long and 10 inches broad, and magnified the mosquito to the size it assumes in the imagination of the summer girl or summer man who finds one inside the bar, and fights it in the darkness as it sings and bites through a sultry summer night.

Aside from the matured specimens of the Jersey mosquito exhibited, there were cases full of baby mosquitoes, and even the process of their hatching in the marshes was illustrated.

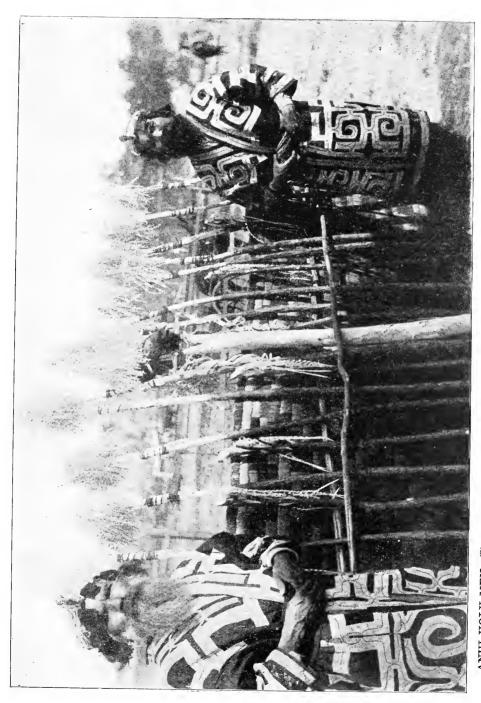
The exhibit showed not only how mosquitoes breed and live in New Jersey, but how their breeding places may be sought out and treated with chemicals, so that the yearly yield of mosquitoes may be curtailed. This was one of many similar practical exhibits.



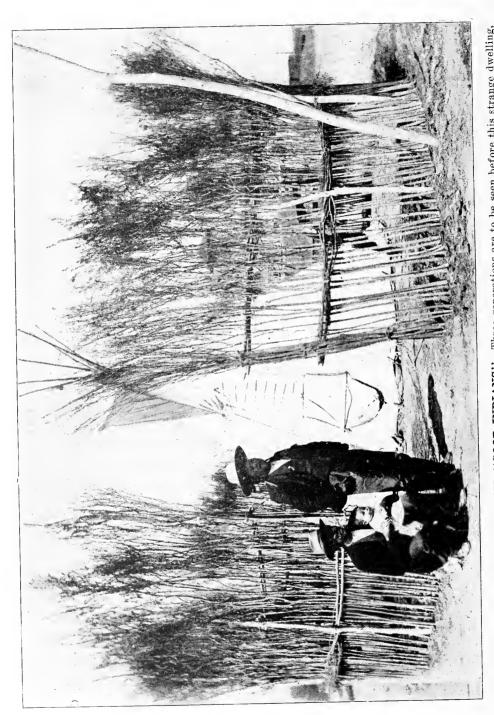
ABORIGINAL HABITATIONS—One of the most interesting sections of the anthropological department of the exposition was that showing the different types of dwelling places of the North American aborigines. Here are a finished strawthatched hut and two wigwams made of skins—distinct types. The Ferris Wheel is seen in the distance.



COMMANCHE INDIAN SHACK—This abode of the noble red man housed a large family during the fair and attracted a host of curious visitors. It illustrates the Commanche's conception of building operations and his best effort to erect a permanent home. The Indian owner sits in silence, coolly surveying the throng of sight-seeing invaders.



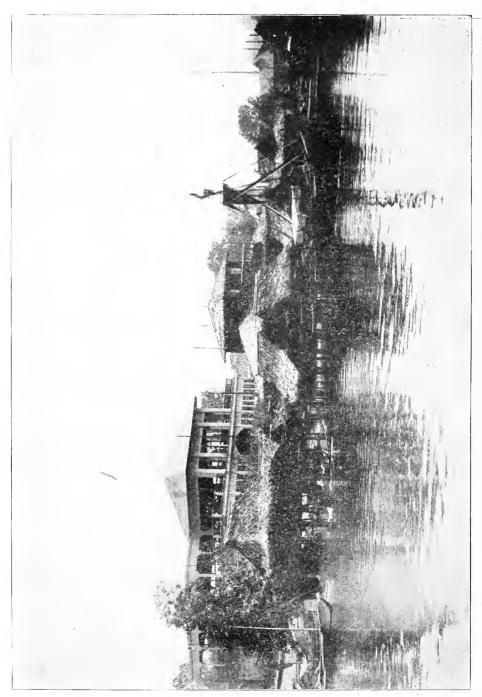
ANUI HOLY MEN—These strange characters from the Northern Pacific, with their fantastic garb and decorations, thoir weird customs and peculiar devotions, made them a source of never-ending wonderment to visitors. The two chieftains shown in the illustration are excellent types of the Anui—perhaps the best in the entire camp.



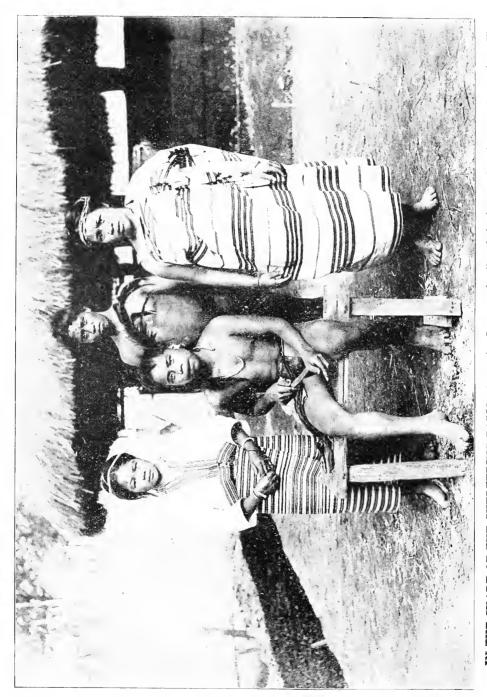
COMANCHE INDIAN TEPEE AND "GOOD INDIANS"—Three generations are to be seen before this strange dwelling, one of many odd sights at the great exposition. Long contact with the pale face has made "good Indians" of these braves and they wear conventional attire, their black hair, however, pleated; here civilization and savagery meet.



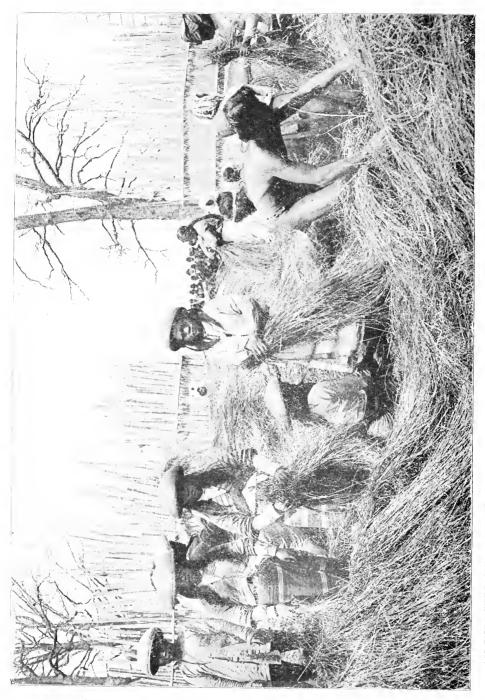
SAVAGE MUSICIANS AND DANCERS—The Filipino Igorrotes furnished a vast fund of amusement to exposition visitors in the shape of native dances. They illustrated a commendable economy, for the dancers themselves often beat the tomtoms, thereby furnishing the music for their own fantastic motions. The objects around which their dancers revolved were generally a shield and spear.



WATER DWELLERS OF THE PHILIPPINES—Over the waters of Arrowhead Lake, in the Filipino Reservation, the Nipas pitched their straw-thatched buts, balanced on stilts, just as they were in the habit of doing at home. Their cances and quaintly rigged sailing boats navigated it in a brisk and picturesque fashion, and the little brown strangers seemed thoroughly to enjoy themselves.



IN THE SHADE OF THE SHELTERING PALM—An entire Igorrote family of the better class in reception attire. The array includes father and son, mother and daughter, although all appear about the same age. Behind them appears the thatched but they call home. Dozers of such families were included in the Philippine section.



AN INDUSTRIOUS MOMENT—Igorrotes engaged in house building and erecting a bamboo stockade at the Philippine section, Louisiana Purchase Exposition. These aborgines are binding dried grass for the exterior of their rude huts. Contact with white visitors has taught some the advantages of clothing, although others adhere to their native scant costume.

CHAPTER XIX.

THE STUDY OF MANKIND

Object of the Anthropological Department—Description of Guiding Genius—Strength in Mixed Blood—Central African Pygmies an Ancient People—The Tehuelche Giants of Patagonia—The Ainu of Northern Japan—A Slice of Real Indian Life—A Model Indian School on Exhibition—Mental and Manual Training of Indian Youth—Success Through Temporary Failure—Remarkable Display from the Land of the Aztec—Egypt and Prehistoric Man—Moundbuilders of the Ohio and Mississippi Valleys—The Conquest of Fire—Evolution of the Knife and Wheel—Development of the Louisiana Purchase Illustrated—Physical Studies of Mankind.

HE Department of Anthropology found its reason for being in the facts, first, that an exposition is the university of the masses, and second, that all education leads to knowledge of Man. The aim of other departments of the Louisiana Purchase Exposition was to exhibit the Works of Man; the aim of this department was to exhibit Man both as creature and as worker; so that the several departments, uniting in a harmonious whole, jointly represented Man and his Works.

OBJECT OF THE ANTHROPOLOGICAL DEPARTMENT.

The special object of the Department of Anthropology was to show each half of the world how the other half lives, and thereby to promote not only knowledge but also peace and good will among the nations; for it is the lesson of experience that personal contact is the best solvent of enmity and distrust between persons and peoples. The primary motives of expositions are commercial and intellectual; yet the time would seem to be ripe for introducing a moral motive among the rest—and save, incidentally, in the department connected with education, there is little place for the revelation of the moral motive except in the Department of Anthropology.

So, in the Louisiana Purchase Exposition, this department was planned and organized in accordance with the motive of bringing together as many as possible of the world's races and peoples in a harmonious assemblage, to the end that all the world might profit by mutual and sympathetic study of Man and Man's achievements.

In no small degree the Department of Anthropology was the combining element for the other departments and also for the special exhibits of nations, States, and corporations; accordingly it not only touched in its work and exhibits various portions of a broad field, but it was so placed on the ground as to form a series of connecting links between cognate if not not closely related exhibits. The offices and several of the displays were arranged in the Anthropology building adjacent to the Administration headquarters, and also to the Hall of Congresses.

ARRANGEMENT OF LIVING EXHIBITS.

The living exhibits were gathered about the Indian School building, standing on a sightly location midway between Administration headquarters and the Philippine exhibit. The more advanced aborigines were in and near the Indian school, while less-advanced tribes occupied ranges extending thence to Arrowhead Lake and the Philippine exhibit. The Alaska building, with its aboriginal decorations in the form of lofty totem poles and carved house fronts, was placed between the Anthropology building and the Indian School. Thence westward stretched the extensive grounds allotted to the Department of Athletics, in which, under a distinct and capable management, the more attractive and strenuous activities of mankind were effectively displayed.

The department was made up of sections, each designed to illustrate a distinctive and attractive aspect of practical anthropology by means of typical exhibits. It was not planned to cover the entire field of the Science of Man in these sections and exhibits; the aim was to make each display representative, and to give it such place on the grounds and in the literature of the exposition as first to attract and next to educate citizens and foreign visitors—to lead all to realize with Pope that—

The proper study of Mankind is Man.

DESCRIPTION OF GUIDING GENIUS.

Professor W. J. McGee, the distinguished scientist who was in charge of the Department of Anthropology, is a native of Iowa. A student from early childhood, he studied Latin, higher mathematics, and astronomy, and engaged in land-surveying and justice court practice while still at farm work. In 1874-76 he invented, patented and manufactured a number of agricultural implements, working at forge and bench. In 1875-77 he studied archæology and geology, and for the four succeeding years was

engaged in making geologic and topographic surveys of Northeastern Iowa covering 17,000 square miles—the most extensive survey ever executed in America without public aid. In 1881-2 he examined and reported upon building stones of Iowa for the Tenth Census. He then became attached to the United States Geological Survey, and in 1885 assumed charge of an important division. He surveyed and mapped 300,000 square miles in the Southeastern United States, and compiled geological maps of the United States and of New York. He investigated the Charleston earthquake in 1886, and a few years later explored Tiburon island and made exhaustive researches among its people, a savage tribe never before studied. He was Ethnologist in charge of the Government Bureau of American Ethnology from 1893-1903, resigning in the latter year to assume duty with the Louisiana Purchase Exposition.

Dr. McGee is President of the American Anthropological Association; ex-President of the Anthropological Society of Washington; ex-Acting President of the A. A. A. S.; Vice-President of the National Geographic Society; Vice-President of the Archæological Institute of America; Associate Editor of the National Geographic Magazine; Associate Editor of the American Anthropologist; Author-Editor of the Department of Anthropology in the International Encyclopedia; and a founder of the Geological Society of America and the Columbia Historical Society. In 1902-3 he prepared the plan for the organization of the International Commission of Archæology and Ethnology, and is Dean of the American Commission therein.

Dr. McGee is the author of Pleistocene History of Northeastern Iowa, 1891; Geology of Chesapeake Bay, 1888; The Lafayette Formation, 1892; The Potable Waters of Eastern United States, 1894; the Sicuan Indians, 1897; Primitive Trephining in Peru, 1898; besides numerous scientific memoirs published by the Government, and about 300 minor articles comprising numerous contributions to magazines and scientific publications. His latest work is a history of the Seri Indians, published in 1901.

STRENGTH IN MIXED BLOOD.

The study of the world's peoples and nations reveals the interesting fact that, within limits not yet fully understood, the vigor of peoples is measured by complexity of blood no less than by extent of knowledge or culture. Herein lies reason enough for the study of race-types; and here, too, may well lie the basis of that innate and intuitive curiosity

which renders alien races so attractive to all mankind. It was the object of the section of Ethnology at once to gratify instinctive curiosity and to satisfy the more serious impulses of students by bringing together a more complete assemblage of the world's peoples than had hitherto been seen. Circumstances did not permit the gathering of all the world's peoples on the exposition grounds; but the programme provided for assembling, in the Department of Anthropology and elsewhere, representatives of all the world's races, ranging from the smallest pygmies to the most gigantic peoples, from the darkest blacks to the dominant whites, and from the lowest known culture (the dawn of the Stone Age) to its highest culmination in that Age of Metal, which, as this exposition showed, is now maturing in the Age of Power.

CENTRAL AFRICAN PYGMIES AN ANCIENT PEOPLE.

Through the energetic co-operation of Rev. S. P. Verner, President of Stillman Institute (Tuskaloosa, Alabama), a group of Batwa pygmies from Central Africa, were secured to form part of the outdoor exhibit of this section. Since the time of Herodotus the existence of African pygmies has been known, though it was only a few years ago that they were rediscovered by Du Chaillu, Schweinfurth and Stanley. The studies of Mr. Verner and others have shown that the little people are really the aborigines of the Dark Continent, of which the greater portion have been displayed by full-sized tribes. Practically nothing is known of the language, laws, or beliefs of the pygmies, though travelers say that they are skillful hunters, slaying the lion and the elephant and even the rhinoceros and hippopotamus, with poisoned darts. But two or three pygmies have ever left their native ranges; none had hitherto crossed the Atlantic to the western hemisphere. Mr. Verner's expedition had the favor of His Majesty, King Leopold of Belgium, who took a personal interest in the enterprise.

THE TEHUELCHE GIANTS OF PATAGONIA.

Through the co-operation of Professor J. B. Hatcher, of Carnegie Museum, a party was organized in Argentina, in immediate charge of Dr. Arthur Fenton, of Gallegas, to visit the Straits of Magellan and secure the attendance of Chief Mulato, head man of the Tehuelche tribe, in visiting the exposition with his wife, daughter, son-in-law and grandchildren, and one or two other families of the tribe. Since the time of Magel-

lan these Indians have been known as Patagonian Giants; so far as measurements have been made, their mean stature exceeds that of any other known people save, probably, the Seri Indians of Northwestern Mexico. The Tehuelche family occupies a skin house or toldo; they subsist partly on sea food, partly on spoil of the inland chase; the men are skillful in navigating large canoes containing fires for warmth and cooking; in the chase they depend chiefly on the bolas—a triple thong loaded with stone weights at the ends—which is thrown a great distance to entangle the quarry.

The family groups with their appurtenances, including one or two toldos and fireplace-canoes, were located at the fair, on the shores of Arrowhead Lake adjacent to the African pygmies and the ethnologic display from the Philippines. As it was the first time these interesting people have ever been seen in North America, an entire chapter (VI) has been set aside for a detailed story concerning them.

THE AINU OF NORTHERN JAPAN.

Family groups representing various other seldom-seen aborigines were on the grounds of the department. Among these were the Ainu tribe of the Island of Hokkaido (Northern Japan), representing the primitive race of the Japanese Empire, and illustrating in their occupations and handiwork some of the most significant stages in industrial development known to students—germs of some of those material arts, which, in their perfection, have raised Japan to leading rank among the world's nations; the Cocopa Indians, from the Lower Colorado, a tribe still cultivating aboriginal crops by primitive methods, and whose men are equal in stature to the Patagonians, though the women are shorter; the Seri Indians, of Tiburon island, northwestern Mexico, probably the most gigantic tribe extant, whose culture is so low that they may be classed as just entering the Stone Age; the "Red Negroes" of Central Africa, represented by Chief Ndombe and his court, occupying the upper Kasai valley and forming an ethnic strain and social class not hitherto studied by scientists: and about a score of the aboriginal tribes still surviving in the United The last named included the Pueblo groups, occupying structures modeled after portions of their native pueblos; plains tribes, with their tipis, shields, and other insignia so arranged as to express social organization; basket makers from northern California and central Arizona; blanket weavers, potters, skin dressers, bead workers, copper shapers, arrow makers, and other native artisans pursuing their craft according to the ways of their ancestors in pre-Columbian times. The several groups typified aboriginal life, and both special students and general visitors found in them an index to the inner life of the Red Race, whose rise and passing form the opening epic of American history. Several groups clustered about notable figures; Chief Joseph, of the Nez Perce tribe, one of the ablest leaders ever sprung from American soil; an Apache chief, who withstood the United States army for years; the stately Kiowa chief, Quanah Parker—these are among the native personages who attended the exposition and participated in the work of the department.

A SLICE OF REAL INDIAN LIFE.

Some of the aboriginal groups (especially those from the Pueblo region) were sufficiently large to permit adequate display, not only of the collective industries and games, but of the ceremonial life of the tribes. After much consideration in the Indian Bureau, it was decided, on the recommendation of Superintendent McCowan, that the best possible Indian exhibit would be one in conjunction with a model Indian school; and furthermore, that the only satisfactory exhibit of Indian life would be one in which the natives conformed to their customary habits and observances in every particular. Accordingly, set games were played and formal ceremonies performed, not in a spectacular way, but at the times and seasons fixed by immemorial custom; so the studious visitor enjoyed on the exposition grounds, opportunities for accurate study hardly less useful than those hitherto available only through weeks or months of life in Indian settlements.

The industries, too, were normal, and visitors were enabled to obtain as souvenirs or as specimens for scientific study, objects of Indian handiwork produced by native methods under their own inspection. These included blankets and woven belts; vases or ollas, plain and decorated; baskets for cooking and other purposes; native metal work in silver and copper; moccasins, medicine bags, and other articles of dressed skin; feather work and bead work in bone, shell and porcupine quills; bows, arrows and quivers, with arrow points of stone, bone and antler; fire drills, etc. The transitional phase of aboriginal life was illustrated by a typical sutlery, or trading-post, through which most of the tribal groups obtained supplies.

While the living groups formed the chief feature of the section of

Ethnology, these were supplemented by notable exhibits of aboriginal handiwork, including one of the richest assemblages of basketry and blanketry extant (the Huckel collection); they were supplemented, also, by the exhibits in the section of Archæology, and, in some measure, by that superb collection of the finest handiwork produced in all the British colonies known as the Queen's Jubilee Presents. This collection of carved ivory, wrought gold, native gems and finely set jewels, feather plumes and fans, tooled leather, and other products of the craft of the most skillful artificers in both Orient and Occident, filling some thirty large cases, was exhibited at the exposition by the special favor of His Majesty, King Edward VII, and was entrusted to the Department of Anthropology, being housed in the most spacious apartment in the Library building (Hall of Congresses). (See Chapter V.)

THE PRICELESS VATICAN COLLECTION.

To this department, too, was confided the custody of the Vatican collection—a priceless assemblage of historical and other treasures representing the internal growth and extension of influence of the Vatican during the centuries, sent to the exposition by special dispensation of His Holiness, Pope Pius XIII. These notable collections linked the exhibits of this section with those of the section of History.

The primary motive of the ethnological exhibits was to show the world a little known side of human life; yet it was the aim to do this in such manner that all might learn something of that upward course of human development beginning with the Dark Ages of tooth and claw and stone tools, and culminating in the modern enlightenment illustrated in the great Exhibit Palaces and the International Congresses.

A MODEL INDIAN SCHOOL ON EXHIBITION.

The fifty-eighth Congress made an appropriation for a Model Indian School, to be exhibited at the exposition, and by authority of the Hon. E. A. Hitchcock, Secretary of the Interior, the Commissioner of Indian Affairs, Hon. W. A. Jones, appointed Mr. S. M. McCowan superintendent of this Indian exhibit. Subsequently, Mr. McCowan was made Assistant Chief of the Department of Anthropology, in which the plan for the Indian School was merged.

To accommodate the exhibit a special building was erected. Appropriately enough the finishing of the interior was left to advanced pupils

in the Indian training schools, who thereby demonstrated their proficiency and illustrated the practical character of modern Indian education.

MENTAL AND MANUAL TRAINING OF INDIAN YOUTH.

On one side of a central hallway, overlooking the other exposition buildings, were the class-rooms and work-rooms, in which both the mental and manual training of the Indian youth (of both sexes) was carried forward by Indian and white teachers under Mr. McCowan's directions; on the other side of the hall were a series of booths in which groups of old Indian artisans were engaged in primitive manual operations, so that every passer by could see at a glance the contrast between the old and the new, the barbaric and the enlightened. About 100 pupils of different grades were assembled, and so far as practicable there were children of parents gathered in the family groups—one of the objects of the exhibit being to illustrate a primary feature of modern Indian education, i. e., that of training the youth in the sight of their parents in order that all may rise together toward the plane of self-supporting and self-respecting citizenship.

In an extension of the building was an auditorium designed to accommodate an Indian orchestra, which discoursed both Caucasian and native music; it was also used for lectures and conferences in which the White and Red races participated jointly. On the balcony in front, an Indian band was stationed, overlooking a broad parade ground devoted to military drill and training of the larger boys. The basement contained a kitchen and dining-room, in which culinary teaching was both utilized and illustrated, while the upper story served as a model dormitory for pupils and teachers.

SUCCESS THROUGH TEMPORARY FAILURE.

One of the gravest tasks of any progressive nation is that of caring for alien wards, i. e., bearing "the White Man's burden," as told by Kipling, or performing the Strong Man's duty, as felt by most modern statesmen. No nation may be proud of the way in which this task has been done in the past; our own failures in this regard have brought the Indian Office and in the United States Congress to a stage which shows that at last our Indian education is good—not beyond betterment, yet good enough to be a boon to the survivors of our passing race and worthy to be exhibited at the St. Louis concourse of nations. Such is the motive

of the modern Indian School, the product of the wisdom of three generations of Indian teachers. The school is designed not merely as a consummation, but as a prophecy; for now that other primitive peoples are passing under the beneficent influence and protection of the Stars and Stripes, it is needful to take stock of past progress as a guide to the future. Over against the Indian on the grounds, just beyond Arrowhead Lake, stood the Filipino, even as over against the Red Man on the continent, just beyond the Pacific, stands the brown man of the nearer Orient; and it was the aim of the Model Indian School to extend an influence across both intervening waters which should be to the benefit of both races.

REMARKABLE DISPLAY FROM THE LAND OF THE AZTEC.

The collections exhibited in this section were installed in the permanent fireproof structure known as the Anthropology building. greater portion of the exhibits was contributed by countries and States. From Mexico-the Land of the Aztec and seat of the highest native advancement in North America—came a remarkable collection, including originals and reproductions of her most striking relics; carved idols of stone and wood and decorated figurines of fictile ware; obsidian cores and blades, the latter so excellent as to serve for surgical instruments or razors; calendar stones and other calendric inscriptions; native hieroglyphic books on maguey paper; primitive sunbursts of polished obsidian and pyrite; amulets and esoteric emblems of beaten and semifused gold; sculptures and portrait moldings representing personages of Mexico's unwritten history-these are some of the contributions taken from the Museo Nacional and other repositories in the interests of the exposition. A unique feature of the display was a full-size reproduction of a portion of the ancient city of Mitla.

EGYPT AND PREHISTORIC MAN.

From Egypt came collections befitting the Land of the Lotus, in which civilization found its earliest germ; an entire tomb, mummies and mummy cases of royal personages and of the deified cat, with scarabs and other sacramental symbols of an early cult, being among the objects on exhibition.

Egypt is the world's treasure-house of antiquities, and from these the finest and most typical were chosen to tell the tale of the rise and decline of her dynasties. These included restorations in minature of some of the

most notable sites, so wrought as faithfully to reproduce the original character.

France sent a collection of rare relics designed to illustrate the development of prehistoric Man from his advent in Tertiary times up to his entrance into the Bronze Age, as traced by her eminent archæologists; the chipped flints ascribed to the Ancient River Men being given prominence.

MOUND BUILDERS OF THE OHIO AND MISSISSIPPI VALLEYS.

Under a special State appropriation, Ohio contributed a rich collection of relics left by the mound-building Indians who inhabited the fertile valleys of the Ohio and the Mississippi up to the times of De Soto and La Salle. The exhibit comprised map models of the Great Serpent Mound, the remarkable circular earthwork of the Miami valley, and other reproductions, as well as a rich collection (from the Museum of the State University) of stone implements and weapons, bone fish-hooks and needles, copper gorgets and knives, and other artifacts recording the industrial life of one of the most advanced native populations of our present territory.

THE CONQUEST OF FIRE.

In addition to the numerous special collections, plans were perfected for exhibiting a number of what may be called synthetic series illustrating the greatest among the early advances of mankind. Perhaps the initial step in human progress was the Conquest of Fire, since man is essentially the fire-making animal; and this step was illustrated by a series of devices ranging from the fire-drill and fire-pump representing the stage in which Fire—the Red Flower of East Indian lore—was thought an animate deity and its production a vital process, through pyrite (or fire-stone) apparatus to the flint and steel and tinder-box, and thence to the sulphur stick and phosphorus match, standing for the stage in which Fire is recognized as a chemical process.

EVOLUTION OF THE KNIFE AND WHEEL.

Scarcely less important was the Development of the Knife, which was illustrated by prehistoric relics and primitive artifacts ranging from the emblematic tooth and talon of lowest savagery through the sharp edges of shell and bamboo stem to the blade of wood and chipped or flaked stone, and thence to cold-hammered copper and meteoric iron, and so on to the

stage of hot forging, with the alloying and smelting of modern metallurgy; for although the way was long from tooth of deified beast, as a symbol of supremacy, to the jeweled sword as an emblem of militant power, its course may be shown in a few score specimens properly arranged and labeled.

Another marker of human progress was the Evolution of the Wheel—the basis of all modern mechanics—which was easily represented by a series of objects from its beginning, as a divinatory or gaming device, through its faith-inspired use as a roller under heavy beams and stones, up to its employment in primitive vehicles when animals were domesticated, and thence to its incorporation in machines as a transmitter of power—indeed, the exposition grounds revealed every stage in the evolution of the wheel, from the pole and ring game of the Apache and the hair-whorl of the Hopi Indian maiden up to the rotary propeller of the airship.

DEVELOPMENT OF PIPES AND SMOKING.

Pipes and smoking may not represent a specially important line of human development, yet, since the Red Man gave the White tobacco and pipes in exchange for his rum and glassware, it seemed especially appropriate to represent by actual objects (both prehistoric and recent) the development of the pipe and smoking in America.

Just as it was the purpose of the section of Ethnology to illustrate the trend of human progress by means of groups representing various stages of development, so it was the motive of the section of Archæology to demonstrate the same general course of progress by specimens and series representing the successive stages of advancement during prehistoric times; and the record of the relics was measurably supplemented by the living records of another section showing the later development of a vast territory from a savage wilderness to the great commonwealth of which the seat of the exposition is the metropolis.

DEVELOPMENT OF THE LOUISIANA PURCHASE ILLUSTRATED.

The strong desire to make the fair an exposition of Progress naturally operated to curtail provision for extensive historical exhibits; accordingly, the display of early records and historic relics was practically limited to those pertaining to the development of the Louisiana Purchase. In framing the plans for this section and in arranging for the displays, the department had the courteous and efficient co-operation of the Mis-

souri Historical Society, while other institutions of kindred character in neighboring States contributed the material requisite to illustrate the growth and aggrandizement of the original Louisiana Territory. The historical exhibits occupied the second floor of the Anthropology building.

So far as practicable the serial or synthetic method was followed in this section. Thus the management proceeded to epitomize the development of St. Louis in a series of manuscript and printed records supplemented by all available maps, plans and sketches of the city and its environs, together with portraits of historic personages and some of the most significant relics, covering the period from the early French and Spanish occupation up to the present—in which the metropolis spoke for itself.

Similarly, there was assembled, so far as practicable in chronological order, the records and relics of America's first great exploring expedition, that of Lewis and Clark; and in the same way the explorations of Father De Smet, Pere Marquette, and other pioneers were illustrated—the material pertaining to the latter missionary including the unique oil portrait recently recovered accidentally in Canada. So, also, the leading events and personages in the history of the States carved out of the Purchase were shown in carefully selected records and relics arranged in chronological or other simple sequence.

The most striking example of human progress in all the world's history is that afforded by the Louisiana Purchase during the century that ended in the creation of this exposition. Every effort was directed toward rendering the historical display sufficiently full and comprehensive, to inspire, no less than to instruct, both American citizens and visitors from other lands.

PHYSICAL AND MENTAL STUDIES OF MANKIND.

Through the work of the Department of Anthropology, as well as through the enterprise of other departments and the unprecedented cooperation of foreign countries, the Louisiana Purchase Exposition comprised a more complete assembly of the peoples of the world than had ever before been brought together; and this assembling of races and peoples was utilized in systematic studies of both the physical and the mental characteristics of mankind. This work was entrusted to Dr. R. S. Woodworth, of Columbia University, who selected apparatus and super-

vised the measurements and researches in accordance with the most advanced scientific methods. Laboratories were installed in the large rooms in the western wing of the Anthropology building.

The anthropometric examinations included measurements of stature, arm-spread, girth, weight, head form, facial angle, attitude of eyes, chest expansion, girth of body and limbs, relative lengths of limbs and body, rates of pulsation and respiration, with determinations of digital and joint movements, form and expression of features, etc. Photography was freely used as an adjunct to the measurements, while molds and casts of typical figures were made. In addition to the customary measures, tests of strength, endurance, etc., were introduced, in order that the results might indicate—so far as measurements may—the relative physical value of the different races of the peoples.

In these determinations not merely the primitive folk assembled in the department were utilized, but representatives of foreign nations and alien peoples participating in the exhibits on the Pike, and through the co-operation of Mr. J. E. Sullivan, Chief of the Department of Physical Culture, corresponding measurements were made of typical athletes participating in the Olympic Games and other athletic contests, in order that the comparative records should cover the widest possible range in physical development as well as in ethnic affinity.

THE SPECIAL SENSES UNDER EXAMINATION.

The psychic examinations included measurements (by means of apparatus devised for the purpose during recent years) of sensitiveness to temperature, delicacy of touch and taste, acuteness of vision and hearing, and other sense reactions, together with power of co-ordination as expressed in rapidity and accuracy of forming judgments, etc. Special attention was given to color-blindness, imperfect hearing, etc., in order to determine the relative prevalence of sense defects in the different races and culture stages, and thus to ascertain (if possible) in a quantitative way the effects of civilized and enlightened life on the physical system.

The systematic work in the anthropometric and psychometric laboratories attracted the attention of scientists and experts from all parts of the world, and is expected to lead to results of such permanent value as to form one of the lasting monuments to the world's greatest exposition.

THE BOND OF UNION.

It was necessary for the visitor to understand the meaning of Anthropology and the scope of the department in order to see the unity of the exposition. Otherwise he would at once say that the great Filipino Reservation, the medley of many strange peoples along the Pike and other exhibits of savage and semi-savage life, were disunited fragments—simply unmeaning shows, without educational value or unity of purpose. When he understood that these strange exhibitions of life, so foreign to his own, were all presented to furnish a living illustration of the various degrees of man's development on this earth, he became a thoughtful spectator, his conception of the exhibition was broadened and his admiration for its well-laid and thoroughly executed plans was greatly increased.

As we have seen, also, not only was the entire exposition theoretically embraced in the Anthropological department—the Study of Mankind—but here alone were records made of such comparative examinations of the different human races as would furnish a knowledge of their present condition, physical and mental, with their advancement through the past. It was this department which not only bound together the Louisiana Purchase Exposition as a whole, but gave to it its broadest, highest and grandest significance.

CHAPTER XX.

DEPARTMENT OF SOCIAL ECONOMY

Social Exhibits First Scientifically Developed—Scope of the Department—Installation of Exhibits—Regulation of Industry and Labor—Charities and Correction—Improved Charitable and Reformatory Institutions—Rural and Municipal Hygiene—A Modern Hygiene Laboratory in Operation—Foreign Participation—The Model Street at the Fair—Paving and Parking—An Object Lesson in Modern City Buildings—American League of Civil Improvement.

THE systematic exhibit of Social Economy shown at the Louisiana Purchase Exposition was a development of the preceding great international expositions.

Although the subject was given some attention in the French expositions of 1867 and 1878, and while credit is due M. Le Play, the noted French economist, for his pioneer efforts in this direction, the subject cannot be said to have had an exposition status until the Paris exposition of 1889, when Social Economy was made a separate group in the official classification. Even here it was more a national exposition of the social and economic condition of France than otherwise. It was practically the result of two years' investigation by French experts and economists of the condition of the economic institutions of France. The exposition was of permanent benefit to Paris, as the exhibit formed the nucleus of the famous Musee Sociale, so munificently endowed by the Count de Chambrun and others.

SOCIAL EXHIBITS FIRST SCIENTIFICALLY DEVELOPED.

In Chicago, in 1893, the Social Economy exhibits were arranged in seven distinct groups, but were scattered in two or three parts of the grounds. At the Paris exposition of 1900, under the presidency of M. Jules Siegfried, a prominent member of the French Senate and one of the foremost leaders in social and industrial questions, the exhibits of this nature were developed on a scientific and satisfactory basis. A separate building was devoted to the installation of the exhibits, and it was one of the most attractive and instructive sections of the exposition.

SCOPE OF THE DEPARTMENT.

There is no department in exposition classification which is more extensive in its scope, or under which can be gathered so many distinct exhibits. In fact, its comprehensiveness proved somewhat embarrassing, as in addition to the legitimate and scientific topics embraced in its classification, there was seeming warrant for many fads and crotchets which had to be excluded.

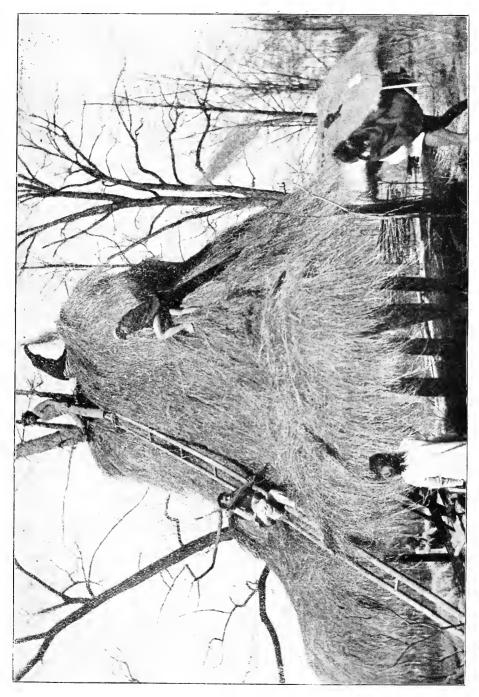
The department was conveniently subdivided by its chief, Howard J. Rogers, into four general heads: First, Social Economy Proper, including the subjects of the study and investigation of social and economic conditions, economic resources and organization, State regulation of industry and labor, organization of industrial workers, methods of industrial remuneration, co-operative institutions, provident institutions, housing of the working classes, the liquor question and general betterment movements; second, Charities and Correction; third, Hygiene and Public Health; fourth, Municipal Improvement.

Many of the most vital questions which engross the attention of business men, statesmen, and philanthropists are included in the above categories. The questions involved in the study of social economics are as old as the human race, but it is only within the memory of the present generation that they have begun to be considered in a scientific manner, and with due regard to the rights and privileges of every branch of society.

The St. Louis exposition continued the precedent established at Paris of including all those questions which deal with man in his most general relations to his fellowmen under one group, but differed from the French exposition by including in the classification industrial as well as social or reform institutions. The purpose of this was to permit any country or locality to present not only its social problems and efforts for the improvement of conditions, but also a complete survey of its natural resources and its industrial organization.

INSTALLATION OF EXHIBITS.

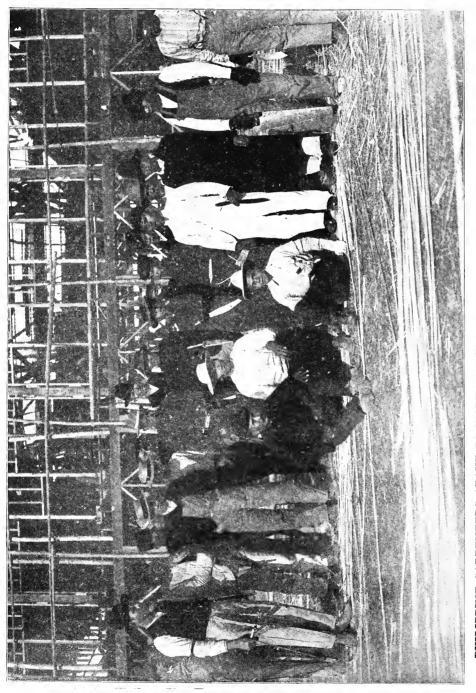
No separate building was erected for the Social Economy department. The exhibits of the department were in the south corridor of the Education building. Two of the subjects treated in the Social Economy department, viz., Public Health and Charities and Correction, correlated very closely with corresponding educational exhibits. The Municipal Improve-



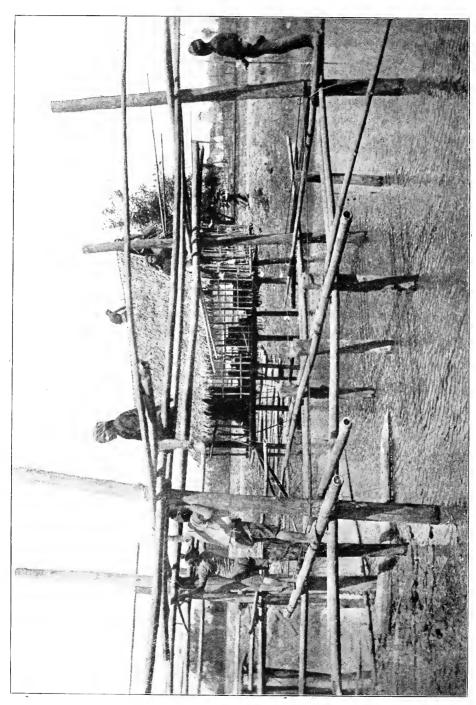
ALMOST READY TO MOVE IN—Warlike Igorrotes from the Philippine Islands are putting the finishing tonches to a grass hut. 'Devil Chasers' are being placed at the apex to scare away evil spirits from the abode. It is a great epoch in the family life.



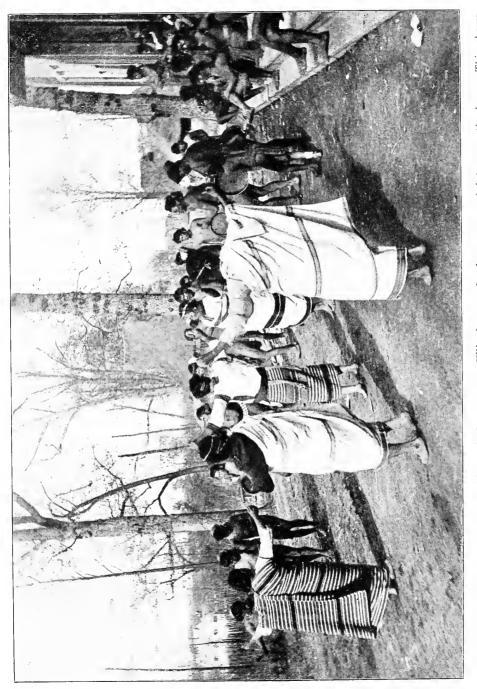
FILIPINOS OF ANOTHER TYPE—Contact with the white man has inspired among some of the tribes a desire to follow in his footsteps. One of the curious sights of the fair was the teacher, shown in this picture, engaged in instructing the islanders in the rudiments of learning. They proved apt pupils in many instances.



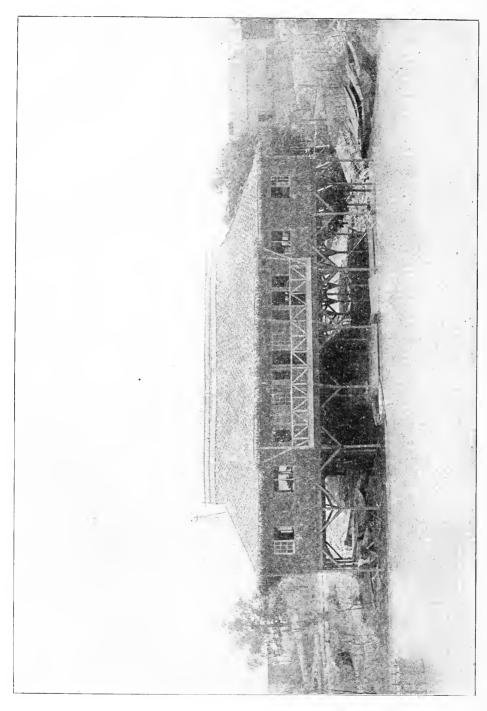
PHILIPPINE CARPENTERS ABOUT TO WORK—Our little brown men at the exposition were not averse to the proposition to delay building operations with their bamboos and other light material, in order that the camera might present them to the public and they themselves obtain a short sun-bath. Rest and sun never come amiss to them. The diverse types of faces make an interesting study.



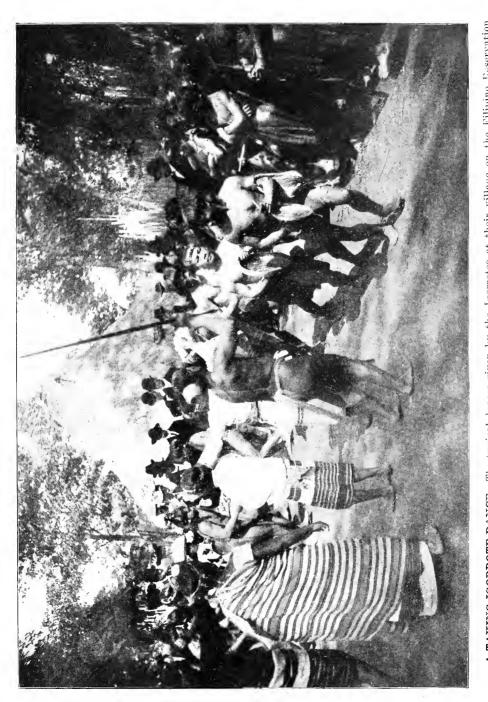
HOME BUILDING AT THE FALE—Vizcavan workmen from the distant Philippine archipelago engaged in the construction of a native house in a morass. As at home, they built at the fair on tall stakes to lift their bamboo habitations beyond the reach of yenomous reptiles. The busy little yellow artisans appear like so many small Loys while scampering minbly about at their familiar employment.



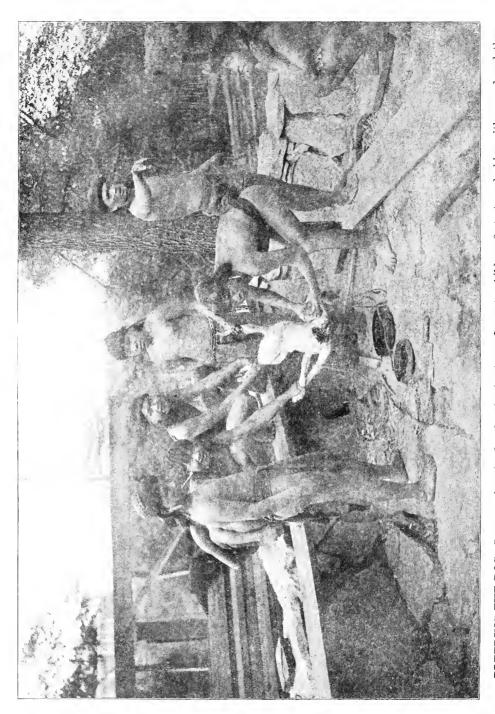
ON WITH THE DANCE—Anything relating to our Filippino wards always aroused intense enthusiasm. This shows the Igorrotes celebrating the completion of their chief's straw dwelling, with terpsichorean festivities on the green. The men chant and dance, while the women look on in silence.



HOUSE OF A MORO CHIEF—The Moro village at the Louisiana Purchase Exposition was built on the shores of Arrowhead Lake. The native water huts were all great attractions, but the house of the chief was the grand magnet. It was not only quite spacious and not devoid of architectural pretensions, but was really "it"—the very house in which the chief lived at home, shipped at great expense from the Philippines to the fair.



A TAKING IGORROTE DANCE—The typical dances given by the Igorrotes at their village on the Filipino Esservation always attracted a crowd. Those who took part displayed a remarkable variety of costume. Some were naked save for a clout, while many of the women, except for their bare feet and legs, were attired in bright striped goods, with not unbecoming headdresses. Their long war spear was always in evidence.



BLEEDING THE DOG—In preparing the dog for the feast our Igorrote children first strangle him with a cord and then bleed him. This was the time when most of the spectators got on their shocked expression, which hugely amused those who were about to partake. Those chiefly concerned in the bleeding always put on their fiercest looks at this stage of the proceedings.

ment exhibit was apart from the other displays of the department, and was installed in the buildings along the Model Street. For this reason the exhibit of the economic resources and industrial organization (Group 130) of the States and cities which exhibited in the Model Street were removed from the Education building.

REGULATION OF INDUSTRY AND LABOR.

The exhibit of the first ten groups in the Social Economy section, which concerned the regulation of industry and labor, including factory inspection and mine inspection, the organization of employers and employed, wage systems, profit sharing, co-operation, banking, insurance, tenement house commissions, legal regulation of liquor traffic, and general betterment movements, was necessarily statistical and literary in character, and did not appeal particularly to the general public.

The presentation of material exhibited was necessarily by charts, photographs, printed matter and models, and was made purely with the intention of appealing to scientists and the persons particularly interested in the development of the subject. Among the most important exhibits installed in the section of Social Economy proper was a wonderful compilation of general insurance statistics by insurance experts; the work of the Tenement House commission of New York City; the historical exhibit of one of the oldest banks in the United States; the excise regulations of some of the more important States; the most improved methods of protection of workers in factories and mines; the social work of the Salvation Army; the industrial and betterment work of such firms as the N. O. Nelson Manufacturing Company, the Heinz Company, and the National Cash Register Company, and a collective exhibit of the institutional work of the Catholic Church.

CHARITIES AND CORRECTION.

This section was in charge of a special superintendent, Mr. A. E. Pope, and an advisory committee, appointed from the National Conference of Charities and Correction consisting of Charles R. Henderson, Chicago; Jeffrey R. Brackett, Baltimore; Robert W. de Forest, New York; Ernest J. Bicknell, Chicago; Hastings H. Hart, Chicago; Mary E. Perry, St. Louis.

The entire field of public care of the destitute, delinquent and defective was carefully subdivided, and the exhibits were strictly classified

thereunder. There were included under this section not only public care and relief of the needy and destitute, but hospitals, dispensaries, treatment of the insane, feeble-minded and epileptic, treatment and identification of criminals, and supervisory and educational movements for the improvement of the various classes. Owing to the nature of the display and the limited amount of space, exhibits in this section were collective. For example, exhibits from the prisons of the world were placed side by side instead of being arranged according to locality. In a similar manner exhibits from hospitals, asylums for the insane, child-saving institutions, etc., were grouped together. Visitors gained a more intelligent conception of the exhibit as a whole by this method, and were better able to appreciate the merits of the different systems.

IMPROVED CHARITABLE AND REFORMATORY INSTITUTIONS.

Prominent among the exhibits installed in this group were models of the most improved hospitals and institutions for the insane, feeble-minded and epileptic; model of the Colony for Epileptics at Sonyea; model of the Federal Prison in Mexico, considered to be the finest built jail in the world, and a model jail in working operation. Under this group was also installed the collective exhibit made under the auspices of the International Association of Chiefs of Police. The Bureau of Identification at Washington, illustrating both the Bertillon and English finger-print systems, was transferred to the building, and placed at the service of the detective force of the exposition in keeping the grounds clear of crooks and criminals.

There was also shown under the hospital class a pathological exhibit, collected from the various hospitals of the country, and tracing the effect of the various diseases upon the body. This exhibit was made under the auspices of the American Medical Association, and was studied in conjunction with the model hospital rooms, the apparatus installed, for lack of room, being placed in the Liberal Arts building.

RURAL AND MUNICIPAL HYGIENE.

In no subject during the last three decades have civilized countries been so interested, or paid so much attention as to rural and municipal hygiene. The possibility of preventing disease has been made plainly apparent, and it has come to be considered a public duty to provide every possible means for such prevention, as well as to provide for curative processes after the disease has become established. Recognizing the value of having at the exposition the latest discoveries and scientific methods for protecting public health, more than a year before the opening date, the subject was placed in the hands of one of the most noted specialists in the country, Dr. J. N. Hurty.

A MODERN HYGIENE LABORATORY IN OPERATION.

In addition to a general statistical and literary exhibit on the best methods of combating and preventing the spread of disease, there was displayed a modern, completely equipped, hygiene laboratory, in working operation. In it all manner of actual chemical and bacteriological examinations were continually conducted, such as are required in modern disease-prevention work. Arrangements were made with the health authorities of cities, towns and country within five or six hours reach of St. Louis, to send in samples of blood for malaria and typhoid tests, material for pneumonia and tuberculosis tests, and waters for chemical and bacteriological examination, also food and drugs for chemical analysis. In addition to notification of results to the senders of specimens, bulletins were issued for the inspection of visitors. This laboratory and its practical work were valuable in showing to all officials and other citizens how necessary such an institution is, if preventable diseases are to be efficiently opposed.

Foreign and home boards of health were fully represented, and models and plans exhibited of emergency hospitals, sanitary dwellings and buildings, garbage collection and disposal, ventilation, lighting and heating of schoolhouses, theaters, churches, etc., railway sanitation, and disposal of the dead.

FOREIGN PARTICIPATION.

England, France, Germany, Russia, Italy and Mexico made the principal exhibits from among the foreign nations. The exhibit of France had the special oversight of M. Jules Siegfried, and dealt with all the groups of the department. The exhibit of Germany was particularly, thorough in public hygiene and in public institutions.

THE MODEL STREET AT THE FAIR.

Perhaps no feature of the exposition was more exploited in the public press than the Model Street. It has seemed to strike a popular response and to evince the great interest which the citizens of the country, both individually and as municipal officers, are taking in the subject of Municipal Improvement. Responding to this general interest, the management provided an exhibit which comprised all the latest and best features of municipal economy. The display was practical to the letter, and of the greatest value to municipal councils and boards in search of the latest ideas for street and park improvements.

The work of laying out the Model Street, along which the buildings were erected, was in the hands of the Engineering Department. The exhibit had a double character: First, it created a practical, suggestive exposition of street equipment and city arrangement, in which every feature was brought out with reference to its relation to the community, its fitness and its beauty.

Second, it was a comparative exhibit by municipalities, in which the twenty-five leading cities of the United States participated by the contribution of exhibits illustrating some particular phase of their municipal development. There was also presented a commercial exhibit, where individual exhibitors presented their products, in competition for awards, in the usual way.

The street was 1,200 feet long, and immediately in front of the main (Lindell) entrance to the exposition. It was approximately four city blocks in length, with a public square in the center, and buildings along both sides of the street. The roadway in the center was 42 feet wide, with grass lawns on either side between the roadway and the sidewalks.

PAVING AND PARKING.

The paving, the parking, and the entire equipment of this street were worked out according to the best approved methods, no matter from what part of the world obtained, the object being to illustrate the highest ideals that have been realized along particular lines by the most advanced cities in the world. For example, the paving represented the modern, improved material used in good street making; one section was made of asphalt, another of vitrified brick, another of wooden blocks, treated by the latest preserving processes, etc. Several methods of curbing were used.

Close to either end of the street were two restaurants, each occupying a space of 128x112 feet. The hospital, day nursery, model library building, model school erected by the Missouri Commission, municipal museum erected by St. Paul and Minneapolis, casino by Kansas City, park shelter by Boston, similar buildings by Buffalo and San Francisco, and the

model railroad station presented by the city of Atlanta, Ga., all held places on the Model thoroughfare. The day nursery cost \$20,000 and was under the direction of the Board of Lady Managers.

AN OBJECT LESSON IN MODERN CITY BUILDINGS.

The purpose of the Municipal Improvement Exhibit was to furnish an object lesson in modern city building, and to impress the visitor with an attractive civic picture. The visitor entering at the main gates, or descending from the intramural railway, passed through the railway station, which was the official entrance to the street. This depot, built by the city of Atlanta, Ga., was a modification of the new \$1,000,000 passenger station of the Southeastern metropolis. While neither a miniature nor an exact reproduction of the Atlanta depot, the building reproduced the most striking features of the original, and was strongly reminiscent of it in composition and detail.

Passing through the station, the visitor encountered a spacious square, large enough to provide for the traffic which always accumulates at such a point, while beyond was the town hall, the central and most monumental building in the composition. Before the town hall rose the Civic Pride monument, designed by J. Massey Rhind, the New York sculptor, since engaged upon a fountain for the German Emperor and a statue for Andrew Carnegie. The monument facing a fountain and basin of water filled with aquatic plants, represented order out of chaos, and the civic virtues.

From the square the main street of the exhibit extended off to the right and left, following a gentle curve to conform with the contour of the exposition buildings. All buildings were located along this thoroughfare. An exhaustive exhibit of street fixtures, lamp posts, drinking fountains, kiosks, fire plugs, etc., and a septic tank in operation were shown along the street, and in the park adjoining the town hall many exhibits from European cities were installed. There were also an exhibition of tree planting, with special reference to providing a sufficiency of water and air about the roots. This was especially interesting in view of the fact that great difficulties are met with in every city in the effort to induce shade trees to grow upon narrow road lawns.

In the case of cities that did not put up buildings, space for exhibits was provided in the Arcade building, the arrangement of which was such that a city occupied one or more sections according to the extent of the

exhibit that was made. The foreign indoor exhibits were housed in the town hall.

AMERICAN LEAGUE OF CIVIC IMPROVEMENT.

The original advocate of a municipal exhibit at the exposition, and its strong supporter in all stages of development, was the American League for Civic Improvement, whose headquarters are in Chicago.

The architectural details of the section were under the direction of Mr. Albert Kelsey, of Philadelphia, Superintendent of the Municipal Improvement section. Mr. Kelsey drew the plans for many of the buildings erected on the Street. His plan, so ably conceived and executed, was to make each of the diverse buildings conform to a civic scheme, and at the same time not to detract from their individuality; to assemble as many diverse units of city-making as possible, and also to form a civic center where the best of the object lessons were to be harmoniously exhibited in their relation to architectural surroundings.

This is the first time in the history of international expositions that the special feature, in a separate space, of outdoor municipal exhibits was undertaken. The rapid advance and development of American cities within the past decade, and the great interest which is now being manifested by municipalities and the general public in the subject of city beautifying, encouraged the exposition authorities to believe that an object lesson, suggestive and practical, would meet a popular demand in this country, and be of great practical interest; and this belief was fully sustained by the results. The problems dealt with were those certain to exist in the home town of every visitor, and the exhibits suggested what is most needful in the improvement of municipalities, whether large or small.

CHAPTER XXI.

FILIPINOS AT THE FAIR

Old Manila and Manila Architecture—The Red Man and the Brown Man Contrasted—Colony of One Thousand Filipinos—\$1,000,000 Required for the Exhibit—Wild Igorrotes on the Filipino Reservation—The Igorrote as Head-Hunter and Dog-Eater—Physical Development and Fever Treatment—Divided Skirt an Igorrote Invention—Gets "Crazy Mad"—First Conquered by Americans—Death Followed by House Wrecking—Debit and Credit Account of Heads—Said to be Ethiopian Immigrants—The Primer Class of Igorrotes—The Dog to the Rescue—Straw Men as Devil Chasers—Disease Demon Driven Away by Dog Offering—The Dog Dance Before the Feast—Sliced Bananas and Stewed Dog.

OR the first time since the Philippine archipelago passed into the possession of the United States an opportunity was afforded the American public to study the strange people of the distant islands, their habits, customs and products at the Louisiana Purchase Exposition at St. Louis. It may even be said that many found their first opportunity there to get a comprehensive idea of the exact location, extent and character of the great island group. This information was afforded through study of an enormous circular map in plaster relief built upon the surface of the ground and encircled by a raised promenade from which a bird's-eye view of that portion of the Pacific could be enjoyed.

In view of the depth of interest attaching to this new American possession it was not remarkable that all who visited the fair at once headed for the Philippine section. All were well repaid for their visit.

OLD MANILA AND MANILA ARCHITECTURE.

The little-known, non-Christian tribes were the magnets which drew them more than anything else. The nipa buildings and the specimens of Manila architecture in the central group of structures were viewed with interest, but the crowds lingered longest about the Cuartel and the bamboo stockades inclosing the native villages.

Most of the visitors approached the Philippines from the main exposition. They crossed the Bridge of Spain, a reproduction of the old struc-

ture of many spans over the Pasig river at Manila, which spanned Arrowhead lake at its widest point.

The Walled City confronted them frowningly at the further side, a reproduction of Old Manila, whose encircling walls were built three hundred years ago. Behind the great gates was displayed a war exhibit.

THE RED MAN AND THE BROWN MAN CONTRASTED.

The red man of America and the brown man of Oceanica, both races the wards of Uncle Sam, both including many tribes, were almost side by side, each on a forty-acre tract. One pathetic difference between the red man and the brown was brought out at this twin exhibition, and that is the Indian is of a disappearing race, while the Filipino appears to be just on the eve of a substantial and lasting development.

Each of these vast exhibits—large enough to form a separate exposition—was made officially. The United States government appropriated money for the Indian display and was in direct charge thereof. The Filipino showing was made by the Insular Government of the Philippine Islands. Each was a part of the general exposition and all visitors to the world's fair were admitted free to these reservations.

COLONY OF ONE THOUSAND FILIPINOS.

The Filipino tract contained more than a score of large buildings and a number of small ones, the latter representing the types of houses in which the natives live. These houses were built by Filipinos, of native materials, bamboo, nipa and other island products. The larger buildings included structures with names like those of the exhibit palaces in the main exposition—Agriculture, Education, Ethnology, etc. More than one thousand natives of the islands lived in this Filipino reservation. The children attended school in a schoolhouse built for them. The elders made mats and hats, conducted shops and carried on their ordinary lines of business.

Wild tribesmen lived in tree-built houses and in huts built on stilts in the lake. Several hundred soldiers from native regiments were quartered in barracks within the walled city of Manila, rebuilt in St. Louis, to which three bridges led, spanning the Laguna de Bay as at home.

Red and brown, these two "forties" were of surpassing interest to those who saw things merely for curiosity and amusement as well as to those who attended the fair to learn.

\$1,000,000 REQUIRED FOR THE EXHIBIT.

Some idea of the extent of the Philippine exhibit may be gathered from the following excerpt from an official bulletin by the government Bureau of Insular Affairs, showing that about \$1,000,000 was necessary to defray the expense of this one feature before the opening of the fair.

"It was originally assumed that the cost of collecting exhibits, assembling in Manila and shipment to the United States would be so great that it would require an appropriation of \$500,000 from Philippine revenues. An agreement was made with the exposition company that when such amount was appropriated by the Philippine Commission the world's fair management would allot \$200,000 from their funds to prepare the grounds and buildings for the reception of these exhibits coming from Manila.

"It was hoped that the latter amount would be adequate for this purpose. However, owing to the unanticipated prices and demands of labor, as well as the cost of material and the severe winter in St. Louis, which has retarded the work, this cost will be exceeded in the amount of \$200,000. During the first part of this month the Philippine Commission appropriated this additional amount."

WILD IGORROTES OF THE FILIPINO RESERVATION.

The United States has no other wards so little known as the wild Igorrotes, some of whom were shown at the Filipino Reservation.

Of these warlike little primitives of the mountains and forests a great deal has been heard since American interest was directed to the Philippines, but not much was certainly known until the Philippines Commission made its report to the President of the United States.

It has been said that the Igorrotes are cannibals and head-hunters, and that they are to the Philippines today what the wild Kiowas of Kansas and Nebraska were to the United States sixty years ago—a warlike, savage people preying upon whomsoever happened their way.

The investigation made by the Philippines Commission enabled us to know that the Igorrote, while black indeed, is not so black as he has been painted. He has been proven innocent of the charge of cannibalism. Likewise has he been found guiltless of that free-heartedness and nomadic life which made the American plains Indian the terror to the West in early days.

THE IGORBOTE AS HEAD-HUNTER AND DOG-EATER.

The Igorrote stands indicted upon but one grave count—his headhunting. But even this offense has the extenuation of being discriminate.

The Igorrote only takes the heads of his enemies.

Upon his arrival at St. Louis, the Igorrote attracted more attention than all the other primitive people at the fair. Not because of his headhunting propensity was he enabled to achieve this foreign fame, but because he insisted upon eating dogs.

So, head-hunter and dog-eater that he is, the Igorrote is not the least interesting of those races which came to the big fair to resume after long lapse of years the linguistic chorus of Babel.

THE IGORROTES IN BRIEF.

The Igorrotes may be briefly summed up and analysed as follows: They are black and all smoke pipes.

They are very warlike mountaineers and hunt with blow guns. They eat with their fingers. They have curly, kinky hair, and are afraid of thunder. They dislike to be questioned. Vanity is their dominant vice. They regard Americans as giants, although they are the largest of the

Filipinos. Cock fighting is their chief amusement.

The mountains of Northern Luzon are full of them. They cultivate sugar cane, rice and sweet potatoes. They are called a fine-looking race for the tropics. The women wear wooden hair combs, made of bamboo. They build quaint little huts in the coffee thickets. The men dance a great deal, but the women never do. They have flat noses, thick lips and high cheek bones. The American soldiers early called them "the black hornets."

While ordinarily very well built, they are not a graceful people. The women are fond of beads and wear great quantities of them. They use the bow and arrow, and it is their principal weapon in warfare. love music, but they have only the simplest of reed instruments. wear their hair long and the men seldom have any hair on the face. are eager gamblers, and any sort of a game of chance appeals to them.

Their huts are built bee-hive fashion, and they creep into them on all fours. The women are said to be very domestic, even though they do lead a gypsy-like life. They are fatalists, and are not much given to reasoning. They are more remote from civilization than any of the other natives of the Philippines.

MARITAL PARTICULARS.

Divorce is quite common among them. When a wife and husband separate they return the dowry. Their bridal couples spend their honeymoon in the mountain wilds before establishing a home. They sleep under the trees until five suns have passed, in order that they may relish the comforts of their home when they move into it. There is no marriage ceremony among the wild Igorrotes beyond the exchange of a handful of rice between bride and groom.

They chew betel nut much as Americans chew tobacco. In their native land they go almost naked, wearing only a clout. They are fond of bathing and swimming, but are not especially clean. They have little confidence in white people, and the Spaniards could never gain their confidence.

PHYSICAL DEVELOPMENT AND FEVER TREATMENT.

The women are well developed, being without that sickly look so common among Filipino women. They treat fever by walking into cold water and standing there, sometimes with the water up to the neck. Passion is seldom expressed in their features, and you cannot tell that an Igorrote is angry by looking at him.

The women carry water and wood and almost all other burdens upon their heads. They are expert at balancing such burdens. They are fond of festivals, and oftentimes continue them through days and nights, the chief features being fire and noise.

Paternal love is one of their ruling sentiments, and both the father and mother exercise a tender care over the little ones.

The Igorrote men are almost all hunters in their native mountains. The women do the housework and cultivate the little gardens.

They are elaborate tattooers, and Igorrote tattooing is only surpassed in design and extent by that of the natives of New Zealand.

They wander from place to place in the forests and mountains, and among the wild Igorrotes there are no towns or regularly-located villages.

DIVIDED SKIRT AN IGORROTE INVENTION.

The divided skirt is an original invention with the Igorrote women, who frequently wear them when they come down from the mountains into the towns.

They are not as black as the Negroes of the African interior, but they are much darker than any of the other Filipinos.

They name their children for the place in which they are born, or for

some bird or snake, or whatever is in mind at the time.

The Igorrotes never cut their hair behind, or, that is, they never do it when they are at home. They permit it to grow as long as it will, and it curls and kinks into quite a hard, bushy mass.

They take good care of their sick, but have no regular medicines, and sometimes make up mixtures which probably kill the patient quicker than

the germs of disease could hope to dispatch him.

Indolence is the curse of the race. The men do little else than follow the chase, and they do not do this when there is anything to eat in the house. Lying around in the shade is their chief pastime.

GETS "CRAZY MAD", AND FIRST CONQUERED BY AMERICANS.

An Igorrote has little capacity for assimilating civilization, and he is one of the natives set down by the Philippines Commission as being not only incapable of self-government, but needing a firm hand to rule him.

The Igorrote has a violent temper. When he is aroused, he gets what Americans would call "crazy mad." At such times he will commit atrocious crimes, and they have been known to turn upon their own households with great fury.

Some of the Igorrotes are tree-dwellers, a form of habitat made necessary by the frequent raids of their enemies. The tree-dweller met this exigency just as the American cliff-dweller did—by building his house where it is inaccessible.

The United States troops were the first to conquer the Igorrotes. The Spaniards sent many expeditions against them, but they were never subjugated until the American followed them into the brush and whipped them into submission.

Family feuds are common among them. Oftentimes these feuds result in many deaths, for the Igorrote is revengeful and he does not hesitate to lay in the bushes with his bolo and do unto others such evil as they have done unto him and his.

The Igorrotes are polygamists, but no man has more than one real wife. The others are his servants, and neither they nor their children have any of the privileges extended to that inner circle of the household, whose center is the recognized wife.

DEATH FOLLOWED BY HOUSE-WRECKING.

The death of an Igorrote is followed by a great clamor in the house. All the members of the family set up a great shricking and crying, and oftentimes the men take out their bolos and hack right and left at the furniture and the walls of the house.

An Igorrote is considered in disrepute if it is known that his enemies have taken more of the heads of his people or family than he has taken in return. They will tolerate a "tie score," as we would call it in America, but it is a disgrace to be a head or so behind.

The Igorrotes are for the most part pagans, and it is only a small element of them that have embraced Christianity through the Catholic Church. It is said that the first members of a Filipino tribe baptized were Igorrotes who went to an exposition at Madrid in 1887.

There is no lovelier wilderness than that in which the Igorrotes have their homes in the mountains of Northern Luzon. Like the dream houses of fairies are their queer little huts, in the close embrace of the coffee trees and that great luxuriance of vegetation which is found in those tropical isles.

DEBIT AND CREDIT ACCOUNT OF HEADS.

Head-hunting is an old custom with the Igorrotes, as it is with others of the black races of the Solomon Islands, Borneo and other isles of Oceanica. The Igorrotes keep a regular debit and credit account of heads, and valor is measured by the number of these possessed by each warrior of the tribe.

They keep the heads of their enemies displayed before their huts, in order that none be either under or over-estimated as a warrior. If an Igorrote is too unskillful in battle or too timid to fare forth and take the heads of his enemies, he is despised by his fellows and he is treated with contempt.

HEADS MEASURE VALOR.

The chiefs are selected according to their fitness to lead, just as chiefs were chosen by the American Indians. As the Indians followed that one of their number who displayed at his tepee the greatest number of his enemies' scalps, so the Igorrotes follow him whose hut is decorated with the greatest number of the heads of his foes.

Young men seeking brides among the Igorrotes must go to the homes

of the girls and reside there for a certain time, in order that the girl's people may determine by close association whether the proposed alliance is desirable. During this period the youth works for the girl's father without pay.

A young Igorrote warrior cannot hope to have a bride until he has proven his valor by taking the heads of some of his enemies. Sometimes a girl's father will give his daughter to a suitor who can show but a single enemy's head, but this is not often the case, and if it is done the people of the tribe know by that sign that the father himself is not much of a head harvester and has no wish to encourage that particular proof of personal valor.

Igorrote funerals are oftentimes very elaborate. The relatives and friends of the deceased all gather upon a certain day, and each brings a piece of game or some other food. This food is placed inside a big canoelike piece of bark taken from a tree, and is sewed within it. The body of the dead is similarly sewed in another piece of bark, and these are buried together, in order that the journey into death may not be accompanied by hunger.

IGORROTES AND INDIANS AS DOG-EATERS.

The Igorrotes have always been dog-eaters, and they consider it not at all strange that they should eat such food. In fact, they are but one of many primitive people who relish the dog at table. The American Indians were in many instances dog-eaters. When Father Jacques Marquette descended the Mississippi river in 1673 the Indian chiefs considered that they were showing him the highest honor within their power when they set before him and his men a nicely-baked dog.

Because they eat dog flesh the Igorrotes aroused the Woman's Humane Society to protest, but they insist on receiving their favorite food while at the fair. Stray canines in the vicinity of their camp were always in danger of sudden death.

AN IGORROTE-CHINESE TRIBE.

The Igorrotes are regarded as being, for the most part, a pure-blooded negro race, though there are tribes of them which have intermarried with less pronounced races and have in this way lost much of their racial distinctiveness. This is particularly true of a tribe of them which long ago affiliated with a band of Chinese pirates and who have now become Igor-

rote-Chinese. They were for a long time more dreaded even than the full-blooded Igorrotes, for, retaining the fearfulness and fighting qualities of the Igorrote, they acquired by the alliance the craftiness of the Mongolian.

SAID TO BE ETHIOPIAN IMMIGRANTS.

The Igorrotes are an unthinking people, and are without any of those native wits and mental strengths which enable some primitive people to know considerable of their ancestors, even though the race is without historians or anything better than traditions. Consequently, the Igorrotes have no idea when their forefathers landed upon the Philippines, or whence or why they came. The prevalent story of their original appearance there is that in the year 1529 B. C., the tyrannical reign of the fierce Cambises caused a great exodus out of Ethiopia, and that a portion of these African blacks put to sea and landed upon the Philippines. This same story is told of the coming of the Negritos, another tribe on the islands. The Igorrotes know nothing at all of it, and have not even a current legend to cover their coming.

MORE EXCITING THAN A DOG-FEAST.

Miss Lenora P. Vandaveer of 3715 North Ninth Street, St. Louis, undertook to teach the young Igorrote idea how to shoot.

She succeeded so well at the very outset that she soon had half a hundred of the little savages able to "see a cat" in English and familiar with what cow, and horse, and apple, and foot, and fan, and particularly dog, sound like in the language of their assimilators.

Miss Vandaveer was the stenographer of Dr. T. K. Hunt, in charge of the Igorrotes. Finding that her duties in that capacity did not occupy all of her time, she set about organizing this class in the English language. She had wanted to teach the little brown people ever since their assimilation and would have gone to the islands where there was a call for school teachers if her father would have permitted her. Her assignment to duties at the Cuertel offered just the opportunity she wanted.

When it became known that all Igorrotes and members of the other tribes who wished could join the first Filipino A B C class in America, there was a rush of Igorrotes, big and little. Response to an announcement of a dog-feast could not have been with greater alacrity.

THE PRIMER CLASS OF IGORROTES.

Of the fifty who came, clamoring to be shown, only one or two could speak a few words of English. In that respect the prospect was about as unpromising as possible, but the proposition before Miss Vandaveer was simple in that she had only to organize one class. Old and young were on the same plane and they were all organized in a primer class.

For the first lesson Miss Vandaveer printed the letters of the alphabet on pieces of cardboard. The pupils crowded eagerly around her, and as she pointed at the characters and pronounced them, the students repeated them after her with considerable exactness.

THE DOG TO THE RESCUE.

Then she spelled out "I s-e-e a c-a-t." She had the scholars spell the words after her and then speak the sentence.

The next thing was to clinch the thing by making the meaning clear. That was where she struck a stump. There wasn't a cat about the place. She made eloquent attempts to convey to them what c-a-t, cat, meant, but they only shook their heads and said something which was apparently the equivalent of "come again."

Then the teacher had an inspiration. She switched to dog. The sentence was changed to "I see a dog." They repeated it after her and she pointed at a bow-wow tied to a banister. It was then that the scholars saw a great light. They were so delighted with the sound of the new name for their favorite dish, that they chattered about it for five minutes.

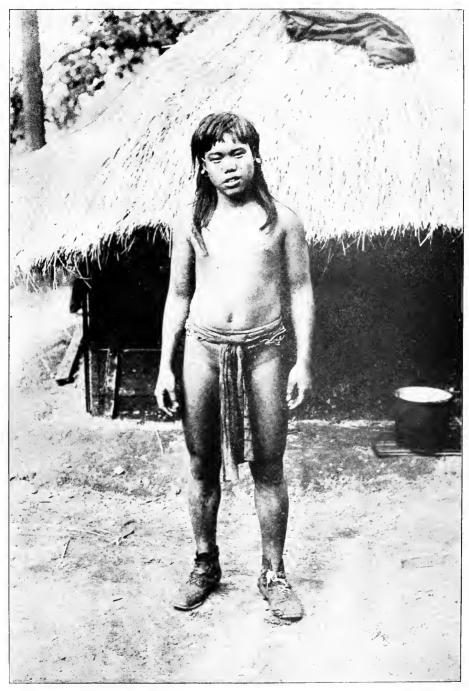
Miss Vandaveer then caused them to "see" various other things in English, things which could be pointed to and identified with the sounds.

To conclude the lesson she gave each of them cardboards on which the alphabet was printed and told them to practice on the letters until the next morning. Their enthusiasm was so great that throughout the day every person visiting the Quartel, who wore United States clothing and appeared to know the alphabet, was impressed into service and prevailed upon to drill a savage in the rudiments of the language.

Miss Vandaveer was delighted with her scholars. "They are keen to learn," she declared.

BUILDING THEIR GRASS-ROOFED HUTS.

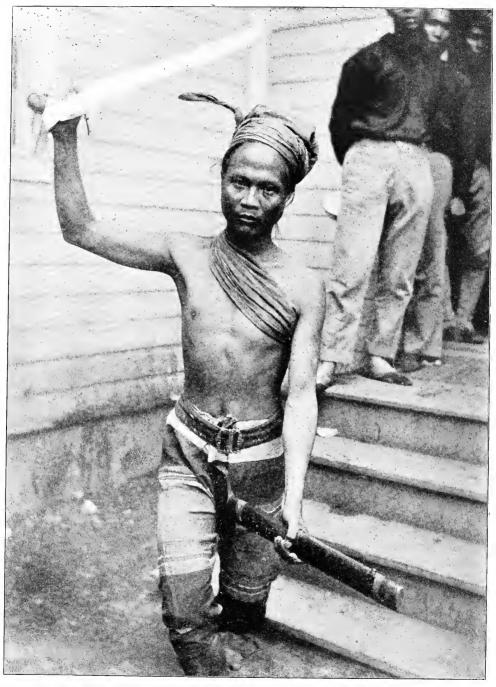
It was an interesting sight to witness the savage islanders constructing their huts upon their arrival at the fair. The Igorrote band worked faith-



A NATIVE OF THE PHILIPPINES AT THE FAIR—This is the style of dress of the Igorrote people of our new possessions. They were brought to the fair by the United States Government and are shown in their native costume. The City of St. Louis provided these people with twenty dogs a day as their ration of meat.

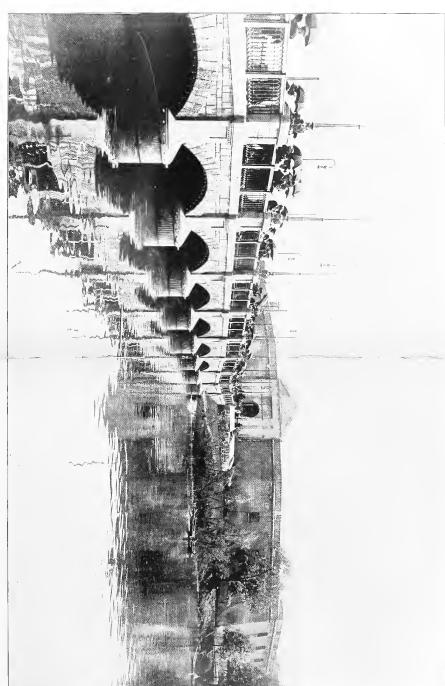


A FILIPINO BELLE—This young woman represents the higher type of islanders who have recently come under the American flag. She is shown standing before the assembly hall in the Philippine section. Personal charm and intelligence are possessed by Filipinos of this type.



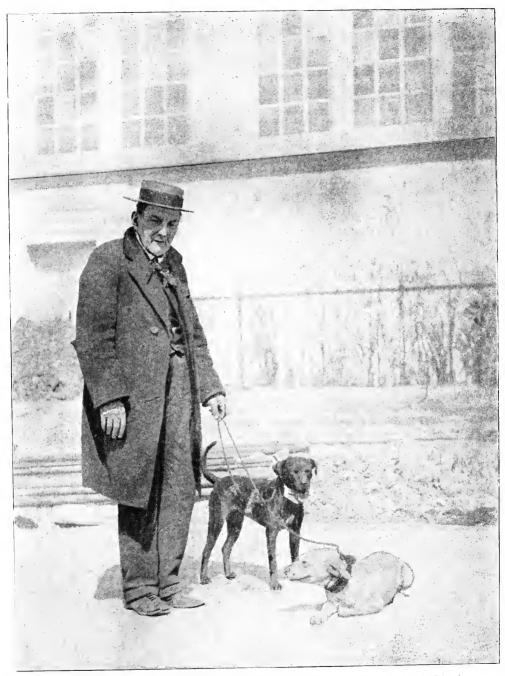
MORO CHIEF POSING AT THE FAIR—Raised aloft by this Moro warrior is the favorite native weapon, a sword with a narrow blade shaped like a tongue of flame. A thrust from this odd weapon, with its keen double edges, inflicts a terrible wound that usually closes when the blade is withdrawn.



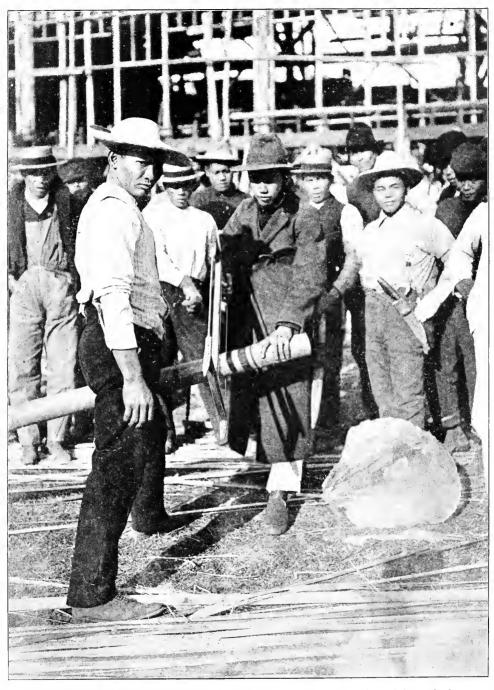


MORO CASTLE AND BRIDGE TO IT—Uncle Sam's fierce Moros, who had a picturesque village on the northern shores of Arrowhead Lake, were made to fred at home by being allowed to reproduce the native bridge which leads to Moro Castle. This was the main thoroughfare to their village and was usually thronged with people who besinged the citadel in a more gentlemanly, but not less persistent way than our Admiral Dewey,

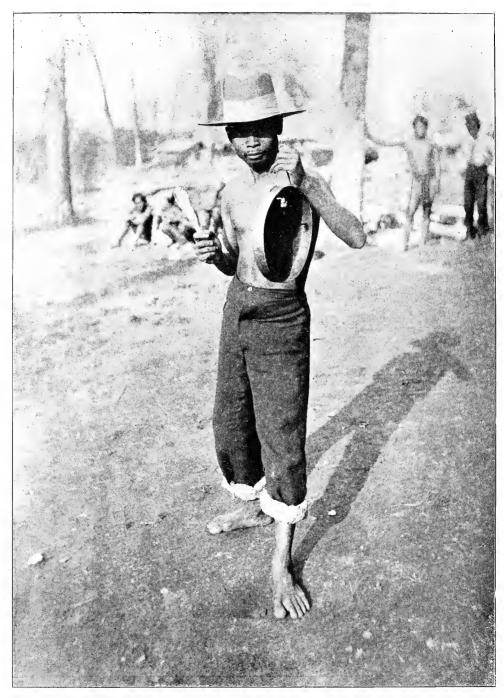
Speciators with cameras were usually warned either to hide them, or, if they could not resist the temptation to use them within the limits of the village, to provide their friends with hurial permits, since no greater insult can be offered to a Moro than to "snap-shot" him. Several attendants were kept busy throwing out this necessary warning to camera fiends.



DOGS TO FEED THE IGORROTES—As this old man approached the Philippine section to sell his two pets to the Igorrotes for food, he was made a victim of the "snap shot." He was only one of many who parted with old canine friends in exchange for money, sadly needed and gladly paid by the hungry Islanders.



BUSY FILIPINO CARPENTERS—One of the most interesting sights of the construction period of the Louisiana Purchase Exposition was afforded by the Filipino workmen. Quick, alert and with cat-like tread, these dark-bued visitors proved wonders in accomplishing work with their strange tools and stranger building material.



DINNER TIME AT THE FAIR—Negrotes were summoned to their meals through the use of a "musical instrument" not unlike the tom-toms to be heard at the lunch rooms of most railroad stations. Aside from its mission as a dinner bell the gong enjoyed great popularity among the Negrotes as a means of entertainment.

fully—faithfully for Igorrotes—and completed two grass-roofed huts a big one and a little one, in as many days.

All the work on each was done by the savages. Woodwork for all the huts had been brought along, but parts had been lost on the way, and it was necessary to hew timbers anew. When the framework had been set and the timbers all thouged together, the roofing was begun and this was turned into a frolic.

Over near the entrance to the stockade the women were reveling in a great mound of native grass, tieing it into wisps and chanting wierd songs as they worked.

The wisps were made into sheaves and half-clad boys carried them on poles across the ravine to the men who were building the houses.

Several worked on the roof, tying the wisps to the bamboo strips. The others hurled the wisps up, with unerring aim, and the men on the roof caught them with a good deal of skill.

The Igorrotes are great resters. They work awhile and then sit down and smoke and rest twice as long. But there were so many of them at this particular task that a good deal of progress was made at that.

Whether working or resting they talked a great deal.

STRAW-MEN AS DEVIL-CHASERS.

When the houses were completed devil-chasers were suspended on slender bamboos at the apex of the roofs to scare evil spirits away. These were small, crude figures of men, made of straw.

With a good deal less fuss and a good deal more success the Tingannes worked quietly away at their bamboo house on stilts, back by the bamboo stockade.

DISEASE DEMON DRIVEN AWAY BY DOG OFFERING.

The Disease Demon was driven from the Igorrote village at the world's fair soon after their arrival with a double-barreled caneo.

Dangusan, a Suyoc Igorrote woman, had been sick for several days in one of the grass huts of the Suyocs. The rest were beginning to get worried about her, and Byungsin, chief of the Suyocs, was petitioned to do something.

Byungsin decided that the occasion called for a united effort on the part of both the Suyocs and the Bontocs. The Suyocs do not eat dog, but the Bontocs consider no caneo complete without dog.

It was well known that the Bontocs were running short of dogs. The

Suyocs had one which was fairly fat, and for which they had no particular need.

The chief had a happy thought. He would make an offering of dog to the Bontocs, and thus get them to help in an assault on the disease demon.

CARLO IS SACRIFICED.

The dog was killed, and Chief Byungsin made passes over the remains and chanted weirdly, all the rest of the Suyocs joining in the chorus.

When the deceased was ready to be singed, the chief did something which none of the white spectators understood. As if in anger, he seized dead Carlo by the feet and flung him as far as possible down the hillside, at the same time saying something which sounded like "dog on it."

But this seemed to be only a part of the hocus-pocus, and after a moment two of the Suyocs went down the hill, gathered Carlo up and brought him back to the fire, and his hair was artistically singed off.

The animal was then roasted and carried to the Bontocs. Both branches of the tribe then had simultaneous caneos, the Suyocs dining on chickens as the Bontocs consumed the dog; and all made valiant assaults on the Demon Disease with approved incantations.

REJOICING OVER RECOVERED PATIENT.

When the ceremony was over Dangusan said she felt a good deal better, and by noon she was able to sit up.

As soon as it became certain that the Spirit of Disease had been driven beyond the stockade, a caneo of thanksgiving was held by the Suyocs. For this a hog was slain. With the porker was purchased a little pig. When all was ready for the sacrifice, the Devil which is supposed to reside in every hog was driven by incantations into the little pig, and it was chased out of the village as fast as it could be made to run.

Before the hog was killed a hen was brought forth and the chief took her in his hands and stroked her feathers for some time. This is a very important part of such proceedings. If she behaves nicely the caneo goes on. If the hen is a "kluck" and if she "hablamal" or talks bad, it is understood that the time is not propitious for the show to go on, and proceedings are temporarily suspended.

FIRST OF MANY DOG FEASTS.

It was a "dog-on" happy occasion for the Igorrotes when the first of a continuous series of dog-feasts was given at their camp. It was the most unusual feast that had ever been witnessed in St. Louis. The yellow dogs—and there were three of them—received no mercy, and the Igorrotes ate the stewed canine as a hungry tramp would masticate a free lunch.

The enthusiasm that attends a banquet at \$10 a plate was small in comparison with the joy shown by the Igorrote. Every night for the preceding two weeks he had gone to bed hearing the barking of the dogs, and was made ravenous by the knowledge that dogs were near. The Igorrote was ready for the performance of any desperate act whereby he might be able to realize on his fondest dreams—a genuine dog dinner, prepared according to the rules of old Luzon.

A dance preceded and followed the dog dinner. Occasions of great joy are always marked by dancing in the home of the Igorrotes. The tribe was awakened at 8 o'clock in the morning and informed that there was something doing in the dog line. They were told that the dog would be served for dinner.

THE DOG-DANCE BEFORE THE FEAST.

The Igorrotes began the dog-dance. They danced in relays. "Let joy be unconfined" was the slogan of the Igorrote, and in order that the noise should not cease, and that activity should not be interrupted, the Igorrotes danced in sections. When one division tired, other willing dancers took the places of those who had "run down."

And so the dancing continued until 11 o'clock. At that hour a guard announced that the dogs were ready for killing. The Igorrotes gave numerous wild whoops of joy. Like doomed men led to the scaffold, the coveted yellow dogs were led from their kennels and prepared for execution.

Knives were whetted and the Igorrotes again danced for joy. The dogs' bodies were thrown into the 16-inch kettles, which were purchased especially for the feast.

DRAW LOTS FOR CHOICE DOG CUTS.

A cracking fire was started under the kettles and the canines were stewed. Members of the tribe drew lots for the choice portions. There is no "white meat" in a dog feast, but there are choice portions, just the same. The ribs, it is said, are particularly palatable, and the livers, shoulders and sides are said to be fine eating—by the Igorrotes.

Three pots were operated, and in each pot a dog was stewed, the fumes

from the boiling kettle furnishing an incentive for more dancing and more noise.

The old men of the tribe took charge of the distribution, and on the bare grass, with no tablecloths, no napkins, nor dishes, the Igorrotes enjoyed their canine feast, and ate heartily.

SLICED BANANAS AND STEWED DOG.

While dog was the paramount feature on the Sunday menu of the Igorrote during his stay at the fair, other native delicacies were offered to the hungry. Sliced bananas doesn't seem an appropriate accompaniment to stewed dog, but the Igorrotes got it. Boiled rice with dog gravy was another item on the bill of fare, and the last number was stogies, which the Igorrotes are extremely fond of.

So voracious were the Igorrotes in their appetite for dog that stray canines and even pets become commercial commodities, and went to the slaughter at prices ranging as high as \$2 each. The teeth of the dogs were carefully preserved. They were polished and mounted and sold as souvenirs.

The Igorrotes went into trade early on their arrival. They worked overtime grinding out Filipino pipes and mouth harps, which they exchanged for United States cigarettes and coin.

Every day crowds of far West Americans gathered around the Cuartel to get a look at their fellow citizens from the far East. The Igorrotes hung out of the second story windows and the Yankees stood back a little distance, and the wonder with which the latter viewed the Igorrotes is only equaled by the wonder with which the Igorrotes viewed their visitors.

It did not take the Igorrotes long to discover that there was a market for anything Filipino among the people who gathered to gaze. They had nothing they could part with except small native pipes and smaller bamboo jewsharps. It was easy to establish an understanding, and trading began.

PREFER TOBACCO TO MONEY.

The Igorrotes were willing to accept money in exchange, but they much preferred cigarettes or tobacco in any other form. As between a nickel and a cigarette their choice was always the cigarette. In a vague way they understood that money was desirable, but they could not smoke it and they had no great opportunity to spend it.

CHAPTER XXII.

THE MOROS AND VISAYANS

Annual Season of Human Sacrifice—Most Savage People on the Globe—Human Life Counts for Nothing—Sure Death to the Camera Fiend—Freed Moro Slave Made a Bride—Ocean Voyage as a Love Promoter—Praying Over an Engaged Couple—
"Swell" Dressers of the Philippines—An Artist in Pants—New Products of Assimilation—Artistic, Linguistic and Musical Visayans—Fighting and Musical Scouts—
Regular Members of the U. S. Army—Iron Constitutions and Disease-Proof—Their First Snow and Snowball Fight—Culture Shown by Philippine Ethnological Museum—
Match Locks, Springfield Rifles and "Bluff" Guns—Native Swords, Hatchets and Execution Knives.

EXT to the Igorrotes the Moros attracted greatest attention at the Filipino Reservation, because of the belief that they are blood-thirsty cannibals who offer up human sacrifices once a year. They are the most savage of the savages, and even at the world's fair were carefully watched to prevent them from murdering anybody.

The Lanao Moros are declared to be eaters of human flesh, and after a battle they enjoy a barbaric feast of the human beings they have slain or the prisoners they have captured. In their battles rather than be captured and roasted alive their enemies will kill themselves, it is asserted.

ANNUAL SEASON OF HUMAN SACRIFICE.

From about October 2 to 12 of every year they have their annual human sacrifice, as did the Aztecs of Cortez's day. Between these days each sultan, of whom there are thirty, sends a slave to the feast. The Moros build a fountain-shaped pyramid of rocks, under which is a fire. When the rocks are heated to a white heat the slaves are bound and thrown upon the burning stones, where they are roasted.

When life is extinct and it is considered by the Moro chief that they are properly roasted, the bodies are taken out on bamboo sticks and then the savages thrust into the parched bodies individual sticks of bamboo and the feast begins.

They are the only cannibals of the present day in the Philippines, 317

and despite the efforts of the War Department it is suspected they still offer up human sacrifices and eat of human flesh. Desperate efforts have been made to abolish these barbaric feasts, but to no avail.

MOST SAVAGE PEOPLE ON THE GLOBE.

Of all the savages in the Philippines these Lanao Moros are the most vicious and bloodthirsty. They required watching every minute of the day and great care was exercised to see that visitors were properly warned of their danger when around them.

"These fellows are the wildest and most savage people on the face of the globe to-day," said the official in charge of them, C. H. Wex, who was private secretary to Governor Ballard, and who talks their language like a native. "I saw one of their human sacrifices and it was the bloodiest and most awe-inspiring sight I ever saw, and I trust that I shall never witness another. The slaves sent in by the sultans are fattened for the feast as we fatten cattle in the States for slaughter in the stockyards. This human offering has been handed down since the beginning of time, and the Spaniards made desperate efforts to break it up, but unsuccessfully.

"The United States soldiers have tried, too, to break up the slaughter of the slaves, but to no avail, for it positively cannot be prohibited. At these barbaric feasts some 100,000 Moros gather, so you see that it is utterly out of the question for the army to prohibit them.

HUMAN LIFE COUNTS FOR NOTHING.

"Human life counts for positively nothing among these Lanao Moros. Murder is so common as to attract no attention. The sultan has the power of life or death, and so have the dattos, and anybody they want killed they simply order him killed. Among the natives they slaughter their enemies. The only way to deal with them is by their own way—that is, kill them. To imprison them is worse than useless."

SURE DEATH TO THE CAMERA FIEND.

Those who tried to get a snap-shot or a photograph of the Moros at the world's fair did so at their own risk.

A sign conveying this information was suspended on the stockade about the Moro village, and displayed in a conspicuous place over the entrance.

This sign was decided upon for fear of some photographer being boloed by an angry Moro.

Guards were instructed to notify kodakers and camera fiends that they should not snap the Moros, and if they did so and got into trouble they should not blame the United States Government, in whose care the Moros were.

The Moros are Mohammedans, and one of the tenets of their religion is against images, and they look upon photographs as images. You can't insult a Moro more than by trying to photograph him, and you're in luck if you're not chased off the earth if you try the kodak on him.

FREED MORO SLAVE MADE A BRIDE.

It was an interesting event at the exposition when Coureygon Soungallaii, a beautiful slave girl of the Mandanao Moros, on the Philippine reservation, was given her freedom in order that she might become a bride.

Datta Asume, an official of the tribe, had fallen in love with her and wanted to make her his wife after the forms of the Mohammedan religion. Moro slaves cannot marry nor be given in marriage, but Moro sultans, or governors, have the power of liberating slaves and enabling them to marry.

Datta Asume pleaded with Sultan Pitiilian with such effect that the sultan promised to make Coureygon free. The promise was as good as the fulfillment in that it removed the restraint which existed and the courtship proceeded ardently, as between equals in Moro society.

The wedding took place soon after the Moros were settled in their village on the shore of Arrowhead lake.

OCEAN VOYAGE AS A LOVE PROMOTER.

The ocean voyage from the Philippines to San Francisco was to blame for the love affair of Datta Asume and the pretty slave girl. At home, at Lake Lanao, the girl had never attracted his attention particularly. She had been like the other slave girls of the village. There were only eighty of them on the ship, and there were long days as the ship plowed the Pacific, and taking a new interest in the slaves which had been brought along, Datta Asume discovered that Coureygon was a girl of singular attractiveness. Her features were so fine, compared to those

of the other slave girls, as to suggest that in her was a strain of the blood of a higher caste.

Before the voyage had been ended Datta Asume had to admit to him-

self that he was in love with the pretty slave girl.

He knew that Sultan Pitiilian could free the girl if he would. He stood well in the eyes of the sultan and on the journey across the continent he took pains to further ingratiate himself in favor.

At last he summoned courage to confess his love for the slave girl

and ask the sultan to make her free.

The consent was given, and Datta Asume hastened to tell Coureygon that she was to be his wife.

LOVER EAGER FOR THE WEDDING.

Datta Asume was impatient. He wanted the wedding bells to ring without delay. But the sultan pointed out that the forms of Mohammedanism and the tribal rites could not be carried out until they were in their own village, and Datta Asume reluctantly agreed to wait.

When the wedding took place everybody within a mile of the Moro village knew something was doing. All night before the wedding day the tom-toms sounded and the wedding guests feasted on roast chicken and rice at the hut of Datta Asume's parents. Sultan Patilian paid the freight.

BRIDE AND GROOM SEPARATED.

After the night's festivities, Asume and Coureygon separated and for three days each remained in the hut of their respective parents. Rahaimuda Lumbayanguhai, the native Mohammedan priest, who was brought from the Philippines with them, visited each in turn and went through the traditional ceremonies.

The second night there was a fiesta at the home of the bride.

At the end of three days the ceremonies concluded with a tom-tom fest.

The ensuing six days they were not allowed to see each other. Then each left the parental hut and the bride built a hut for her lord and master, who thereafter supplied the larder with "chow."

He had the assistance of a few slaves, which were donated by the

sultan and by his father.

The bride was 16 years old. It is not unusual for Moro girls to marry younger. The bridegroom was 22.

During the stay of the Moros at the fair a sultan took unto himself a wife—his ninetieth.

PRAYING OVER AN ENGAGED COUPLE.

Every morning at sunrise these followers of Mohammed pray with their backs toward the sun until it is high in the heavens. At night they pray with their faces to the sun from the approach of sunset until dark. From prayer, on the occasion of this wedding, the whole colony of forty natives took their places at the banquet table, with fish and chicken as the chief articles of an extensive feast. The future fortune of the couple to be married was drunk in holy water, made sacred by the ashes of a prayer, written by the priest Rahaimuda Lumbayanguhai, and burned over the drinking urn at the feast. When all had been satisfied the engaged couple were seated in the center of the room and the other natives armed with bolo knives, spears and shields, and bearing a heavy armor of metal and turtle shells, danced until early in the morning to the beat of tom-toms.

There were eight sultans and three datos in the colony at the exposition, and Sultan Saung Hali held the marriage record with 500 slave girls to his credit. When one sultan sees a girl he would like to marry he asks for a gift of her from the sultan to whom she belongs.

"SWELL" DRESSERS OF THE PHILIPPINES.

To persons who obtained their impressions of the native Filipinos from the decollete Igorrotes, the Mandanao Moros were a great surprise.

Their long suit is clothes. They are the "swell" dressers of the Philippines. Datto Facundo, their chief, is the Berry Wall of Zambo Anga. All the men of the tribe are dudes and they come as near to the sartorial perfection of the chief as they can without being guilty of less majeste. The toilettes of the women are just as brilliant.

AN ARTIST IN PANTS.

Datto Facundo's fancy runs to striped pants, and striped pants are therefore all the rage among the male Moros, for Datto sets the fashions for the men of Mandanao.

He had many pairs of striped pants in his wardrobe. They were woven by hand from silk and cotton and were very brilliant garments indeed. But he also had pants of solid colors, red and blue silk, and satin trousers that were sartorial dreams.

When Datto stood before a camera for the first time in America at the Cuartel to be photographed for this volume he wore his favorite pair of striped pants, of very brilliant hues, a tight-fitting jacket of silk, in a delicate shade of blue, and a turban fashioned out of a silk handkerchief.

Datto had none of his wives with him, so Sumlia, the wife of Tapsin, posed with the chief in the gayest of fiesta array.

She wore a sarong, a sort of elaborated scarf, in lieu of a skirt, and wore it so tight that it discounted by 30 per cent the tie-back of one-time popularity. The upper part of her person was robed in a tight-fitting silk bodice of deceptive coloring, and her black hair was coiled according to the 1904 mode in Zambo Anga, the village from which all the members of the party came.

The ladies who went to see the Moro women in their lake houses on Arrowhead raved over the garments of their eastern sisters, and the men at least gained from an inspection of the wardrobe of Datto Facundo an idea of the colorful possibilities in trousers.

To keep them from contracting American ideas 79 Visayans were imprisoned in the Cuartel on the Philippine reservation at the world's fair. Although theoretically free, they had every right to envy the 120 Moros, who are nominally slaves.

The Visayans were held incommunicado. Reports that there was great dissatisfaction among them leaked out from time to time. Probably one-third of them spoke English. It was declared they acquired American bad habits so readily that it was necessary to practically imprison them.

NEW PRODUCTS OF ASSIMILATION.

Bontoc Igorrotes, Tinganue, Suyoc Igorrotes, Negritos, Visayans, Samal Moros, Lanao Moros, Bogobos, Tagalogs and others were included in the Filipino tribal showing. The most interesting persons of the lot as types of the higher civilization in the Philippine Islands were Francisco and Carmen Mendoza.

They are brother and sister and are Tagalogs, the aristocrats of the islands. In common with most of the Tagalogs they have adopted European dress, with only such modifications as are usual in the tropics.

They attended the world's fair in the capacity of musicians. Carmen had the distinction of being the only person at the Philippine exposition who could play the harp. She played this instrument and her brother played the guitar at the stereopticon building.

ARTISTIC, LINGUISTIC AND MUSICAL VISAYANS.

The Visayan village, located at the left of the entrance to the Philippine exhibit, offered the most artistic of the native Philippine dwellings. Among the Visayans were four children, under nine years old, who could speak Spanish and English. It is a common thing for Visayans to speak three languages.

There was a Visayan orchestra of sixteen pieces in the colony. Deloso Juan, the leader, was the principal personage with the Visayans at the fair. A number of the players were composers as well. "Visayan" is the name given one of their compositions, and "Queen of Hearts" was given to one composed while the orchestra was in Hong Kong. The orchestra played in the native theater, which was a feature of the Visayan village. Another feature was a Catholic church, the Visayans having the only one on the Philippine grounds.

FIGHTING AND MUSICAL SCOUTS.

The Philippine scout, seen in large numbers at the fair, is none of your dog-eating, head-hunting, half-naked Igorrote. He is a well-built man, with a countenance as intelligent as a Japanese or any other civilized person of the Orient, and in manner and bearing he is considered a credit to his race.

There were about 450 of these scouts shown, including a band of forty-five pieces. And the members of this band were not selling-platers in the music line, either. They played the best music in a manner that won great applause from an audience of about 7,000, which gathered on the reservation every afternoon and gazed in wonder on the fighting natives of the Orient.

The band of the Philippine scouts can jump from ragtime to the overture from "William Tell" without batting an eye or making an extra pucker of the lips. Under the direction of Eugene P. Fischer, a former member of the army, this native band rendered pleasing melody.

REGULAR MEMBERS OF THE U.S. ARMY.

Those who visited the world's fair Filipino army found that the Philippines hold something else besides savages. The scouts represent the pick of the native army. They are the dudes of the Philippines and come from the best families. They speak Spanish and their native language fluently, and most of them have a fair knowledge of English.

They have square shoulders, stand perfectly erect, look the soldier from head to foot, and work with vim and determination.

The scouts have sworn allegiance to the stars and stripes and are regular members of the United States Army. Having an appreciation of their rights and privileges, no one can molest them without subjecting himself to the dangers of the bayonet, and as the camp of the Philippine scouts was under army regulations, visitors within the lines had to behave themselves.

At the end of the exposition these scouts were discharged from the army. They were then allowed to remain in this country if they chose, or transported to the Philippines by the Government if they desired to return.

IRON CONSTITUTIONS AND DISEASE-PROOF.

The scouts are short in stature, but are stocky in build. They appear to have constitutions of iron and disease seldom affects them. When they were enlisted in the service of the army in 1901, they were sent into regions in which it had been found that few American soldiers could live. These included the fever districts in the Philippines, places where few white men ever go. Fever holds no dread for a Philippine scout. He is apparently immune.

On the trip across the Pacific few of them were seasick, and from San Francisco to St. Louis the journey overland was not marred by sickness. In the camp at the world's fair there was a great hospital tent but it housed few patients.

Whenever the U. S. army paymaster visited the Philippine scout camp he disbursed over \$7,000 among the natives serving under the stars and stripes. The scouts were allowed full pay, just twice their salaries in the Philippines, and double clothing allowances while at the fair. This was in consideration of the increased cost of living, and the fact that most of them had to send money home to their families. Major W. H. Johnson, in command, installed an army canteen in the camp where soft drinks, sandwiches, fresh milk and tobacco at cost rates could be had. Cigars that cost the Government three cents apiece were sold to the scouts eight for a quarter. Celluloid collars and other dress supplies were also kept.

THEIR FIRST SNOW AND SNOWBALL FIGHT.

The Filipino scouts had the time of their lives at the world's fair on their arrival amid a snowstorm. They made and threw snowballs and

cheered the good throws and accepted the soft "bullets" for full face blows as merrily as children in a pillow fight.

Once in a while some American officer would make a hard snowball and hit one of the men with a force that would almost knock him down and the others would rush to the officer to see how it was done.

The scouts were ordered out to remove the snow from their camp tents and then Maj. Johnson ordered them into the stove-heated tents for warmth. A few moments later, the men in the ranks sent an emissary to Maj. Johnson asking permission to snowball.

He granted the request and within three minutes the battle was raging in all quarters of the camp. The scouts had seen snow for the first time in their trip across the mountains, but when it was described to them they said:

"Quiero probar?" which to a Missourian means "show me." Literally it means "let me feel it." They were "shown" the first thing on their arrival at St. Louis.

A band of eighty pieces accompanied the Philippine constabulary troops. The organization is the same as that of State Militia, except that the former are in active service all the time. They are under the direction of the civil government of the islands, but are clad in the regulation khaki of the army, a narrow red braid as trimmings for their uniforms being the sole distinguishing mark from the regulars.

Nearly every tribe of the archipelago has contributed some of its picked men to the composition of the constabulary. While many of them are Christians, there are Moros who are Mohammedans, and for whom a special mess had to be provided during their stay at the exposition.

Their bill of fare included salmon, salt fish and rice, as the tenets of their faith prohibit the eating of flesh meat. Under the provision of a special article inserted in the form of enlistment, the Mohammedans were allowed to practice their forms of religious worship.

CULTURE SHOWN BY PHILLIPINE ETHNOLOGICAL MUSEUM.

The Museum Exhibit of Philippine Ethnology consisted of exhaustive collections of all the materials made and used by the pagan and Mohammedanized people of the Archipelago. The articles of the Christianized peoples made up the remainder of the Philippine exhibit so far as the native products of the islands were concerned.

The most striking fact brought out about the culture of the wild

peoples of the islands is its shallowness. Two small pieces of bamboo with which to rub fire into being, a sharp stick with which to dig the earth, a narrow strip of flayed bark for the woman to wrap about her hips, with perhaps another strip for the man's breech-cloth and a dense growth of cogon grass or an impassable forest jungle for the startled savages to flee into—and you have the essence of all that is characteristic of the culture of the wild people of the Philippines.

The Ethnological Museum, however, brought together from various characteristic peoples of the islands the articles which told the story of the culture of each group. The beautiful bead-work of the Bogobos, the gaudy colored clothing of the Moros, the exquisite steel-work of the peoples all truly demonstrated that, in spite of the uniform shallowness of the Philippine culture here and there, something has impelled a group of savages to develop to a high degree an industrial activity which elsewhere in the Archipelago may yet be in its crudest development.

MATCH LOCKS, SPRINGFIELD RIFLES AND "BLUFF" GUNS.

In the collection of war material shown were old-fashioned Arab match lock guns, brought into the Philippines from Arabia 150 years ago; a collection of ancient flint locks that date back to the era of the American revolution and also a large number of old-time Springfield rifles. Most of these ancient arms were secured by the tribes from Arabia and China, and Yankee traders are responsible for the bringing into the islands the old Civil War weapons.

There were also a number of wooden guns. These were carried by the Filipinos during the insurrection to deceive the Americans, and make them think that they had more firing arms than they possessed. These wooden arms are a species of Filipino bluff. They were used extensively and with effect on the Spaniards, but the Americans were not cowed by a show of arms.

NATIVE SWORDS, HATCHETS AND EXECUTION KNIVES.

In the exhibit was a vast number of swords, some of them artistically engraved and some inlaid in silver and copper. The Moro sword is incased in a wooden scabbard. It is tied in with grass and carried on the shoulder, so that the Moro appears friendly until he gets up to his victim, when he swings his sword with the scabbard, the blade, of course, cutting

the grass ropes. The result is that the enemy is cut and the scabbard falls to the ground.

Dirks of native make, hatchets with which the savage tribes cut off heads, execution knives for beheading and many other odd implements of warfare, including spears, were in the display. Most of these implements are made by Moros. The bar iron was secured from China and fashioned into war arms by them.

It is said that the Spaniards attempted to build a railroad, but the railroads were torn up by the Moros and the rails made into war implements. Some of these crude affairs, shaped for war hatchets and beheading blades, were shown in the collection.

Natives near old Cavite extracted the iron work from Montejo's fleet after Dewey sank it and converted the iron into war arms, and some of these were also shown. One was a huge hatchet, clumsy, but with a blade as sharp as a razor.

In the collection were suits of armor of the Moros, made of copper chain, fastened to caribo bones, and each suit weighing about sixty pounds. There were helmets of the same material and an endless array of other articles that the Philippine tribes use in their warfare.

ODD FILIPINO MIDGETS.

One of the great curiosities of the Philippine quarter was a pair of marvelous midgets, brother and sister. Juan de la Cruz, the Filipino midget, paid an early visit to the Patagonian giants, and the giants returned the visit later on the same day. Juan had been wanting to see them ever since he heard about them shortly after his arrival. It was too far for him to walk, but he kept on importuning until Mark Evans, who had him in charge, obtained a vehicle and took him over.

The first impulse of the giants, when they saw Juan, was to run. He was so unlike anything human that they had ever seen before that they were not disposed to take any chances on the prowess which might be his, in spite of his lack of stature.

Mr. Evans explained to the interpreter of the giants and he in turn explained to the giants. Introductions followed and everybody shook hands.

MADE "A HIT" WITH PATAGONIAN GIANTS.

The brobdignagians relaxed more than they had on any previous occasion. They examined Juan with great care to make sure that he

was not a man of ordinary size, with a collapsible mechanism which enabled him to flatten like an opera hat, but were forced to conclude that there was no trick about it.

Juan invited them to call on him and said "so long" in Spanish. The giants stood in front of their tent and watched the midget out of sight.

The giants have an idea that the time to pay social obligations is now. So, two hours later, they put on their Sunday guanaco skins and drilled up over the hill to the cuartel and returned the call.

To further show their good will, they took with them oranges and bananas, which they presented to Juan and his sister, Maritana, with prodigious awkwardness and much confusion.

Their interest in Maritana was even greater than had been their interest in Juan. They stayed half an hour, and with more bowing and shaking of hands, they went back over the hill to their tent.

TREE DWELLERS A CURIOSITY.

Greater perhaps than all other Philippine curiosities were the Filipino tree dwellers at home in the Philippine concession. They lived in a tree in the court of the Anthropological building. It was a huge oak, and, with its giant limbs, made an ideal home for these strange people.

These dwellers in trees are not common in the Philippines. They are rapidly dying out, for the American occupation has made the islands so peaceful that no longer do they fear to dwell on the ground where other tribes live. Their only idea in living in trees is to be safe from attack by neighboring tribes. They reach their lofty homes by ladders, which they pull up after them.

It was suggested to the tribesmen through an interpreter that there was nothing to prevent an enemy from cutting down a tree. The reply was that the tree dwellers always had a supply of rocks and stones in their houses, with which they beat off any attempt at tree-chopping, and they also have their war weapons with which to protect themselves.



RED FOX—Picturesque old Red Fox, Brule brave and medicine man, was always surrounded by curious persons during his stay at the big show at St. Louis. It would be hard to find a better type of a dying race than this crafty old character.



PAPOOSE WITH ELK'S-TOOTH MANTLE—Little War Cloud, a chieftain's daughter, proved a great drawing card to members of the Elk's order, who visited the anthropological camp. The papoose wore daily a mantle composed entirely of elk's teeth, now very valuable and worn as emblems and jewelry.



A SIMPLE REPAST—Wearied with duty at the exposition grounds, this soldier has thrown himself down to eat, just as he would in the field in time of military operations. Neither the blazing sun nor the presence of a curious throng disturbs his hearty appetite in the least.



LITTLE NELSON WHITE SHIRT—This papoose, an Arapahoe from the Cheyenne agency, O. T., was only six weeks old when he arrived at the Louisiana Purchase exposition and attracted wide attention from all lovers of children. Throughout the fair he managed to have the best kind of a time.



CHIEF TWO STRIKES—This aborigine, a representative of the Blackfeet, was a silent observer of all that transpired at the exposition. As Two Strikes witnessed the unfolding of history since almost back to the time of the Louisiana purchase, his opinions would have been well worth hearing.



CIVILIZED OR SAVAGE, WHICH?—Here we have the product of a quarter of a century's contact with the white settler. This Indian had no sooner become settled in his new quarters at the fair than he forgot his civilized raiment, daubed on the war-paint and whooped with his fellows from the most remote reservations.



COOKING FOR UNCLE SAM AT THE FAIR—This soldier boy is preparing for dinner after standing a long watch on guard duty in the natural park beyond the Philippine enclosures. There will be mashed potatoes—a luxury in the army. The promptness with which the welcome dinner call will come depends largely upon his briskness.



BIG BEAR—A six-foot warrior, in full dress, with his loved pipe and all the trappings of his people. An example of the race that peopled the great West when the white man turned his face toward the setting sun and began the conquest of Lönisiana.

CHAPTER XXIII.

INDIANS AT THE FAIR

Genesis of the House in the West—Living Underground Like Prairie Dogs—The Tepee a Modern Sioux Conceit—Dirt Lodges of the Western Plain Indians—Dirt Lodges Abandoned for Tepees—Dr. Dorsey and the Exposition Dirt Lodge—Geronimo Refuses to Exhibit Himself—Indian Congress of Fifty-one Tribes—The Sioux Eager Church Goers—A Native Episcopalian Minister—''Men Work, Ugh!'' Says Sioux Chief—Disgusted with the Naked Igorrotes—Cliff Dwellings and Pueblos—Pueblo Women Unique Dressers—First Snowballing by Pueblos—Giants of the Colorado River Valley—Live in Grass Houses and Dress Hair with Mud—Homely Squaw Inventor—Red Women Still the Burden Bearers.

NDIANS! Yes, all kinds of them! The Louisiana Purchase Exposition would not have been physically or educationally complete without them.

Most striking among the Indian features was the queer dirt lodge which a band of Pawnee and Wichita red men burrowed on the west hill near the Indiana building. For this strange domicile was the very antipode of those great white buildings which were the glory of the fair. As they typified the best of man's structural genius west of the Mississippi river, so did this queer Indian house represent the very beginning of architecture in the Louisiana territory.

GENESIS OF THE HOUSE IN THE WEST.

This genesis of the house in the western United States was reproduced that those who visited the fair might study the picture in contrast and gain in a glance an idea just how great were the triumphs of civilization in the Louisiana territory in one hundred years. The student pointing to the one could say: "There is what they were building in this part of the world a century ago; here is what they are building to-day."

LIVING UNDERGROUND LIKE PRAIRIE DOGS.

But not for its comparative interest alone was the dirt lodge of the Indians a fascinating feature of the fair. It was ethnically interesting as

well; for within it the Indians dwelt through the period of the exposition, just as their forefathers lived in such houses out upon the great American plains for many hundreds of years.

Like prairie dogs, they lived underground. Like moles, they burrowed into the earth. Like rabbits, they took refuge from the storm in their warren; and like cave dwellers, they groped around in the half-light, crawled on all fours through narrow passages, and lived very close to that warm-hearted old soul—dear Mother Earth.

Dr. Geo. A. Dorsey, curator of the Field Museum, at Chicago, was commissioned by the exposition Bureau of Ethnology to look after the dirt lodge for the fair.

Dr. Dorsey has worked among the western Indians a great deal. He knows their traditions, the stories of their old men, the customs of the tribes, and much of the history of that western race whose racial picturesqueness was so strong that a hundred years of civilization have been unable to efface it.

THE TEPEE A MODERN SIOUX CONCEIT.

One is ordinarily accustomed to think of the tepee as the typification of Indian homes, to believe that the red man always lived in the conical structure whose practicability has proven such that years ago the United States army adopted it under the name of the Sibley tent.

But the tepee is modern—at least to many tribes. Disappointing as the statement may be, it is true enough, for out on the great plains of the West there lived and died in the centuries thousands upon thousands of Indians, whose eyes never beheld a tepee. This fine little architectural conceit came to many tribes of the Sioux less than a hundred years ago. They made the first tepees in what are now the Dakotas, lifting poles and binding skins about them as a get-shelter-quick plan while hunting the buffalo upon the great plains.

The ancestors of the Sioux, it is held, knew nothing of this little trick. They had no such inviting house. They were gophers pure and simple, and lived in the ground, and it was because of his knowledge of this old house-building custom that Dr. Dorsey was selected by Prof. W. J. McGee, chief of the exposition Bureau of Anthropology, to bring to the fair a band of Indians who would build on the grounds one of those queer old dirt lodges in which the plains Indians lived before the Sioux hit upon the idea of the tepee.

DIRT LODGES OF THE WESTERN PLAIN INDIANS.

Dr. Dorsey knew where to get his men. He knew some old redskins among the Pawnees and the Wichitas who had told him stories of the dirt lodges they lived in when they were boys.

Dr. Dorsey had been fascinated by the story when first he heard it. It ran, in substance, like this:

"The Wichitas and the Pawnees were living on the great plains in their dirt lodges. They were like the prairie dogs, the ground hogs, the gophers and badgers. They burrowed their homes in the earth, and raised over them a frame work of willows, covered this over with tough prairie grass, and then put on the main roof of sod.

"All the tribes of the plains did this. There was no other type of house among them. Some of the braves who went hunting far off to the southwest heard stories of big Indian houses built of stones, but there were nothing but dirt lodges upon the plains, and an Indian town looked like a cluster of bumps on the ground, each with its opening in the top, each with its door leading down at the side, and each sheltering all the way from 30 to 50 persons.

"The Pawnees and the Wichitas lived comfortably in their dirt lodges. The lodge was a good shelter from storms. It was a storehouse in which the meat of the hunters was safe from the wolves and the coyotes which ran over the plains, seeking what meat they might steal. It was a safe retreat from the enemies of the tribe, for the roof was firm and thick and a single warrior could guard the door against any number of foemen.

DIRT LODGES ABANDONED FOR TEPEES.

"The tribes never thought of any other sort of lodge until one day some Pawnee hunters rode down from the North and said: 'We don't know anything about lodges. The Dakotahs are much ahead of us. They have tepees. They live on top of the ground. They have fresh air, and whenever they desire to go to some place where there are more buffalo and elk, they have only to wrap the sides of the house about the poles, lift one end to the girth of a pony and drag the house with them. It is a much better plan than our own.'

"Then it was that the Pawnees, the Wichitas and all the other tribes of the plains abandoned their dirt lodges. They made tepees. It was so much simpler and it required much less work."

DR. DORSEY AND THE EXPOSITION DIRT LODGE.

Dr. Dorsey went West and found some of the old men who had told him this story.

"Can you build us one of those old dirt lodges at the St. Louis fair?" he asked them.

They said "yes," and the result was the strange abode that followed. Forty Indians occupied the huge burro, with their food and practically all their earthly possessions, living in the cellars and sub-cellars just as their ancestors did centuries before.

The Pawnee sweat bath, another unexpected feature of Indian life encountered at the fair, is a rude imitation of the fashionable Turkish bath. The Indians put up a willow tepee and cover it with blankets. They place hot stones in the tepee, cover them with blankets, and pour hot water upon them. The steam fills the tepee, and opens the pores of the skin.

GERONIMO REFUSES TO EXHIBIT HIMSELF.

A party of nine Apaches and five Comanches, dwelling in peace on the grounds of the Government Indian exhibit, included one of the Indian scouts who helped bring about the surrender of Goronimo. There were hopes that Geronimo could be shown exposition visitors, but before the opening word was brought from the stoical old chief of seventy-one years that he wanted "big money" before he would consent. Charles Martine, a noted Apache scout, whose Indian name is Bah-dah-go-gilth-ilth, was among the Apaches.

He was sent by General Miles in 1886 down into Geronimo's camp in New Mexico, and induced the chief to come half way to Skeleton canyon, Arizona, where he was met by General Miles. Here Geronimo consented to surrender, after being told that he would be treated as a prisoner, and separated from his people. George M. Wratten, the Apache interpreter with the party, accompanied Martine into Geronimo's country, and Yanozha, one of the Apaches who surrendered with Geronimo, was another participant in those troublesome proceedings. These Indians were from the reservation at Fort Sill, Oklahoma, and were accompanied by Superintendent J. W. Haddon, of the Comanche Indian School there.

INDIAN CONGRESS OF FIFTY-ONE TRIBES.

Fifty-one different tribes of the North American Indian formed the great assembly of savages shown in the Indian Congress on the Pike without taking into consideration those living elsewhere on the grounds. The tribes presented a rare ethnological picture of the daily life of the aborigine. The Sioux in their tepees, the Winnebagos in their wigwams, the Pimas in their wickiups, Navajos weaving their blankets and the Moquis making their pottery, formed scenes of genuine Indian life seldom found in any of the already familiar pageantry of savagery.

The dances done by the tribes included war dances, sun dances, dances of different feasts to various gods, the scalp dance, the Omaha dance, the Buffalo dance and snake dance. Among the tribes represented in this gathering were Sioux, Black Feet, Crows, Apaches, Assinaboines, Ogallalla Sioux, Cheyenne, Brule Sioux, Porcupine Sioux, Lower Brule Sioux, Crow Creek Sioux, White Clay Sioux, Wounded Knee Sioux, White River Sioux, Pipeclay Sioux, Rosebud Sioux, Flathead, Arapahoes, Peigans, Poncas, Sac and Fox, Pueblos, Moqui, San Carlos Apaches, Jiccarilla, Kiowa, Mescalero Apaches, Wichitas, Iowas, Winnebagos, Omahas, Otoes, Gros Ventre, Pottawatomie, Mojave, Shoshone, Santee, Osages, Pawnees, Chippewas, Tuscaroras, Onandaguia, Oneida, Mohawks, Senecas, Cayaguas, Ojibways.

THE SIOUX EAGER CHURCH GOERS.

A novel feature of Indian life at the fair that attracted widespread attention among visitors was a unique program of church services inaugurated Sunday mornings in the Indian School building, where about 100 Sioux Indians sang popular hymns of the country, translated into their native tongue, and listened to an Episcopal service in Sioux conducted by Scott Charges Alone. The latter member of the Sioux nation was with the ethnological exhibit as interpreter for the Sioux, and was ordained into the Episcopal church at the Rosebud Agency, South Dakota, some years preceding. He secured the large assembly room in the Indian School building for regular Sunday services. The thirty-four Sioux encamped near the school invited the Sioux from the Indian exhibit on the Pike, and the latter eagerly accepted as they had been searching for a place to go to church from the date of their arrival in camp at the exposition.

A NATIVE EPISCOPALIAN MINISTER.

"He should visit the sick and prepare persons for baptism and teach school, when there is opportunity."

"Wayazankapi kin wanwicayag i kta, qa wicasta baptisma on wicayuwiyeye kta, qa tehan okihipica kinhan siceca wayawawicakiye kts iyececa."

This is from the order issued by Bishop Hare of the Episcopal Church of South Dakota to Scot Charges Alone, a full-blood Sioux Indian, permitting him to preach the Gospel to the Indians. The second paragraph is the translation of the first—that is, the second is in the Sioux language.

It is beyond the ordinary individual to understand Sioux, and, what is more, he can't pronounce the names when they are spelled. There is a common saying that "It's all Sioux to me," and a glance at the Sioux of the Bishop's order would seem to make good the saying.

However, the Sioux language is musical. It is delivered in a rather musical manner and the songs of the Sioux are very musical. There have been translations of such familiar hymns as "Rock of Ages," "Nearer, My God, to Thee," and "Blessed Redeemer," that in the Sioux are greatly increased in musical beauty.

Scott Charges Alone learned English at the Indian school of the Rosebud Agency, South Dakota, and speaks English fluently. He was ordained by Bishop Hare, and his official order was displayed to visitors printed in both Sioux and English.

"MEN WORK, UGH!" SAYS SIOUX CHIEF.

Chief Yellow Hair of the Sioux and the warriors of his village at the world's fair made up their minds early as to what they think of the Filipino tribes.

They decided that the Moros and Bontocs and Suyocs won't do.

On their first visit to the villages of the Far East savages the Sioux were favorably impressed. The islanders were doing nothing that day except to sit around and smoke, and Yellow Hair and his braves agreed that their Far East brethren were acting in a very gentlemanly manner. They stayed a long while and manifested keen interest in the attire and manners and houses of the Filipinos.

But it was different when they paid a second visit to the Philippine villages. They found the men actually working, while the women sat around in the shade and gossiped.

Looks of disgust came over the faces of the visiting braves. All said "ugh" with unmistakable displeasure.

"What matter?" was asked by somebody who had an idea that an Indian could understand better if addressed in chunks.

"Men work, ugh!" answered Chief Yellow Hair, and he and his braves strode majestically out of the Bontoc village and returned to their camp.

Their displeasure was so great that not a member of the party would again honor the Philippine village with a visit.

DISGUSTED WITH THE NAKED IGORROTES.

Equally unsatisfactory results followed when Chief Tall Crane of the Sioux, clad in his gayest robes and with his full feathers and accompanied by several of his tribe, including two squaws, called on the Igorrotes. They were admitted to the camp and they walked around, looking keenly at the naked savages. The combined clothes of the savage Igorrotes, if sewed together, would not have made a piece of cloth large enough to flag a freight train.

"Naked!" said old Tall Crane, with a wry face.

"Look at the clothes!" one of the Igorrotes said to another in their native tongue.

The Sioux wandered around the camp of the Igorrotes for half an hour, but apparently did not enjoy themselves. An interpreter said that they were disgusted with the nakedness of the Igorrotes and declared that they were savages and were not American citizens. Chief Tall Crane looked the nude people over critically and shook his head.

"Not good people," he grunted.

While the Sioux wandered about the camp they kept their clothes even tighter around them, bringing up the ends of their blankets so that scarcely their ankles showed. They were much interested when told that the Government had made the Igorrote women wear coats, even if the coats were not buttoned up, for by the coats the women were distinguished from the men.

Very few Igorrotes wore more than a breech clout, and men and

women were dressed the same, except that the women wore a coat or a coarse blouse.

"How do you like them?" was asked of Tall Crane.

"Ugh!" he replied, and shook his head.

The Igorrotes seemed much interested in the Indians, particularly in the gorgeous blankets and headdresses and feathers, and the painted faces, for the Indians were in full dress.

Several Negritos were washing some clothes with their feet in the creek and the Indians stopped to watch them, evidently interested. The Negritos simply kicked the clothes around in the water with their feet and then wrung them out, spreading them on the bank to dry. Then they waded in themselves. They did not use their hands to bathe their bodies.

"That's the way dogs wash," said one of the Indians, according to the interpreter.

The Sioux were also interested in seeing a man clip the wings of the chickens so that they could not fly. The scheme was explained to them, but their faces showed nothing of what they thought of the scheme. When an Igorrote tried to get up a fight between two roosters, however, the Indians grinned as if it were something they understood and liked.

CLIFF DWELLINGS AND PUEBLOS.

In the Cliff Dwellers' concession in the Pike were reproduced the most famous caves of the stone age, as the remains exist to-day in the canons of Arizona, New Mexico and Colorado. An added ethnological interest was found in a large Pueblo of Zuni and Moki Indians, whom science class as the descendants of the ancient race of the kings. These Indians had never previously been shown in any Wild West display or in any exposition. A cliff dwelling exhibit was one of the interesting things on the Chicago Midway, but no living types were with the attraction.

Huge cliffs, rising to beetling heights, form the front of the concession at St. Louis. A tower sixty feet above the passing crowd, overhanging ledges, deep fissures and caverns, were reached by a tortuous trail along the rock sides. Burros conveyed the visitor to the top of the crags, where the caves and their relics could be seen, and where a fine view was obtained of the busy scenes on the Pike below.

Entrance to the exhibit was through a tunnel which pierced the cliffs. The reverse side of the walls presented more caves and other mountain trails. Zuni Pueblo was spread around the inside. A large assembly hall of adobe filled the center of the village. In this theater, the Indians performed the dance of Kachina or masks, the poetic flute dance, and the dramatic snake dance. The Kachina is distinguished by the use of the heads of buffalo and bear which are worn by the warriors over their heads so as to conceal the features. The Snake Kiva, a cavern reached by a ladder, the famous Dance Rock of Wolpi, the Antelope Altar, and other interesting sights rose from cacti and sage growing in the rocks and sand. Long ladders reached to the roofs of the Pueblo dwellings. Potters, weavers, silversmiths, basket makers, blanket makers and other Indian workers gave the final ethnological touch to the attraction.

The band of 150 Moqui, Zuni and Pueblo cliff dwellers was headed by their chief, Governor Ramos Archuleta, a member of the San Juan tribe, and had with them their priest, Cisuke, besides a great number of the young men and maidens, and sages and seers of the tribes. They came to the fair direct from their homes in New Mexico and Arizona.

HEREDITARY GOVERNOR OF THE CLIFF DWELLERS.

The most striking figure of the party was Archuleta, their hereditary Governor. He is the proud possessor of a cane given to him in 1863 by President Lincoln and a silver medal presented to one of his ancestors in 1837 by President Van Buren. The medal is an heirloom of the rulers of the tribe to which he belongs.

One of the cherished possessions of the band is a sacred American eagle, which was brought along with the party to the fair. The bird is an ancient one, probably antedating any member of the band. Other live stock included a quantity of rattlesnakes used in the Moqui snake dance. They also displayed many of their heathen idols, curios and specimens of their basketry, pottery, and bead and burnt-leather work, with the materials for making more. Many of the Indians were Christians.

There were 15 children in the colony, one of these a baby of four months.

The Mokis were entirely new at expositions, having on this occasion left their reservation for the first time. They gave the snake dance, for which they are famous. All these people are regarded as descendants of the people who built the cliff dwellings of the Southwest, and they were a picturesque lot indeed.

PUEBLO WOMEN UNIQUE DRESSERS.

The Pueblo women excited much interest when they appeared, for their dress is unlike that of any other primitive people. They bind their legs in thick white woolen bandages. These women are famous for their feats of balancing water jars or ollas upon their heads.

When the cliff dwellers arrived at the world's fair grounds in the early spring before the opening and peered from their quarters the

sight of snow made them shout with delight.

"Twelke, twelke," screamed the children. In a few minutes the entire band had clambered down the ladders from their aerial perches to revel in the first snow they had ever seen.

"Twelke" is the Pueblo word for a specie of milk weed that grows in the Arizona desert, and the children thought that a high wind had covered the ground with the feathery plumes from its pods.

FIRST SNOWBALLING BY PUEBLOS.

Barefooted they danced about in the snow and gathered it up in their hands, unconsciously made their first snowballs and started pelting each other as they had done with the milk weed plumes.

The older members of the band were as delighted as the children, and threw snowballs with all their might. Even dignified Gov. Ramos marched from his quarters out into the snow and picked up a handful and gravely tasted it.

As soon as they touched the dry floors and their feet began to sting from the cold the papooses sat down, looked at their toes in amazement and cried "hot, hot." After the smarting ceased and they were again playing about the floor of their quarters, they would run to the doors and gaze out at the snow, but none ventured out of the doors again.

Two Eskimos clad in white cotton garments and high boots had the best time since they reached St. Louis when they ran out of doors and started to work in the trenches in the snow storm. They were sent back to their quarters and appeared much disgusted at the order.

GIANTS OF THE COLORADO RIVER VALLEY.

Probably the least familiar type of American Indians at the fair were the Cocopas of the Colorado river country, who set up their strange grasscovered habitation on the Anthropological reservation. A representative showing of members of the strange tribe of Cocopa denizens of the Colorado river swamps along the southern boundary of the United States left their homes to take their places as features of the Anthropological exhibit at St. Louis. They were in charge of E. C. Cushman of the Anthropological department.

These Indians are among the greatest puzzles that scientists have met with. The men are remarkably large for that latitude, few of them being under six feet. The women are about 5 feet 6 inches. They inhabit the lowlands of the Colorado valley, despite the fact that every year they are driven out by floods. They are a tribe of undoubted antiquity, but scientists have never been able to trace their origin. They inhabited the Colorado river valley when Cortez came to America and their mode of life is now the same as it was then. The race is rapidly dying out.

LIVE IN GRASS HOUSES AND DRESS HAIR WITH MUD.

Their grass house, near the hut of the Patagonian giants, attracted unusual attention. No exhibit had ever been made before of the people or their habitation.

The house was made of willow posts and tullies, the latter resembling the grass of bullrushes, which grow in Mexico. It consisted of one room, in which three families were quartered, and a front porch as large as the room where the 22 women and children spent most of their time. Their cooking was done over an open fire, made in a hole in the ground.

The Cocopas have their cellars on top of their houses. In huge baskets on the flat grass roof that always tops a Cocopa house are kept huge baskets in which the corn and beans which go far to supply the family larder are stored.

These baskets, as well as smaller ones, are woven by the Indians and they were to be seen weaving them at the fair. Very primitive but peaceable are the Cocopas. They fish and farm. Their lands are in the Colorado bottoms. As previously explained these bottoms are overflowed every season, but this does not disconcert the Cocopas. As soon as the water recedes they plant their crops of corn and wheat and melons and pumpkins in the mud.

The men, as well as the women, affect long hair. They are great hairdressers. They "do up" their hair in mud and let the mud stay till it is dry, then wash it off. It is said that this really leaves the hair and scalp very clean. The mud is left on two or three days.

There are about 1,000 of the Indians in the Colorado valley. Pablo Colorado is their chief and he was with the party at the fair.

They are great swimmers and runners. It is said that they can run all day in a "dog trot." They snare quail. They have a few guns, but use them little. They were expert bowmen in the zenith of their past.

A HOMELY SQUAW INVENTOR.

The principal lodge of the Arapahoes on the Indian reservation at the world's fair was a recognition of and tribute to the wisdom of a woman. It consisted of a large tepee, surrounded by a circular hedge of willows ten feet high.

Tepees may or may not be as old as the Indians themselves, but the willow hedge which distinguished the Arapahoe Lodge from that of other tribes is a modern device, and a squaw devised it.

Her inventiveness was possibly a recompense for her lack of personal charm, for if there is anything in a name (and there is a lot in an Indian name), she must have been unpleasant to behold. Her name was Spotted Face, and she was also known as Ugly Woman.

Cleveland Warden, full-blood interpreter for the Arapahoes and an authority on the customs of his people, told about it.

"Spotted Face," he said, "had some children in the school on the Valentine agency in Oklahoma, and to be near them she pitched her tepee near the school. It was an exposed position and the wind annoyed her. She cut willows and built a stockade around her tepee, binding the willows together with slippery elm bark. The other Indians laughed at her at first, but they soon saw that the hedge protected the tepee, and it came into use. This was at about the time that the buffaloes disappeared from the plains and the Arapahoes ceased to roam. I think it was in 1877 that Spotted Face built her stockade, and ever since every Arapahoe tepee has been surrounded by a hedge."

In common with all tepees the Arapahoe lodges at the fair faced the east.

RED WOMEN STILL THE BURDEN BEARERS.

"Let the women do the work" is still the motto of the red man. Contact with civilization has not changed him in respect to his contempt for toil.

When the baggage of the Indians arrived at the Indian camp on the

Anthropological reservation at the exposition the bucks found comfortable seats on a mossy bank in the shade of the fence across the road from the site assigned for their camp and gave themselves up to a siesta, while the women did the work.

There were great coils of tepee canvas and great bundles of tepee poles bound about with wire. The squaws unbound the poles and set them with confidence and hung the canvas about them with the opening toward the rising sun.

All the time the bucks sat on the mossy bank and rested.

Only one gave any token that he had any interest in the raising of his tepee. Two Charge, at the risk of losing prestige with his tribesmen, took care of his 2-year-old papoose, Bright Eyes, while Mrs. Two Charge put up the family domicile.

He droned a ditty as he bounced his offspring on his knee, and once, when a couple of white women stopped to look at the pretty child, the rest of the bucks joined in the lullaby to show that they were willing to take care of the baby while the women did the work.

In marked contrast to most features of the Indian display were four Indian students at the Indian school building at the world's fair during the entire term. They were Lizzie Antone of Sapulpa, I. T., an Oneida; Ona Dodson of Bartelsville, I. T., a Cherokee; Etta Loafman of South McAlester, I. T., a Chippewa, and Helen Mitchell of South McAlester, a Cherokee.

Education and association have left them little appearance of the tribes which they represent, but they are American Indian maidens, and proud of their ancestry.

They assisted under the direction of Mrs. McCowan, in getting the interior of the Indian school building ready for world's fair guests.

All four are taking courses of instruction at the Chilocco institution, and all will graduate shortly. They are bright and attractive girls, who have been won away from almost everything tribal except tribal pride.

They were at the building until the close of the fair, and continued their studies during the summer, proving both their natural aptitude for intellectual improvement and their adaptability to the more restricted ways of modern society. In themselves they were a study around which hovered not a few elements of the pathetic.

THE PRIMAL INSTINCT COMMON TO BOTH RACES.

It is simply a question of keeping such representatives of the race away from their own people a sufficient length of time to wean them from their native instincts, upon which determines whether the results of such education shall be permanent or otherwise. How strong that instinct is, to return to the primitive life of the plain and the forest, has been demonstrated upon more than one occasion.

In fact, the instinct is sometimes strong in the nature of the white man who has passed all his days amid scenes of complex society. Especially if he has lived the strenuous life of a bustling, nerve-wearing city, there comes an almost irresistible longing now and then to leave the hurly-burly of it all far behind and be alone with nature and natural life. If it were not that it is becoming more and more the custom to snatch a season of this change away from the social, business and professional cares of the white man's world, there is no telling how many mysterious withdrawals into the wilds of the forest and the expanses of the plains would be recorded.

CHAPTER XXIV.

ESKIMOS AT THE FAIR

Perfect Illusion of Arctic Life—Eskimos Alone Enjoy the Snow—The Columbian Exposition Eskimo Baby—North and South Fall Out Over Red Peppers—Ancient Alaskan History in Totem Poles—Women Managers of Alaskan Exhibits—How Mrs. Ongman Collected Her Exhibit—Saved by Being Buried in the Snow—All Day Getting Breakfast—Superstitions of Alaskan Eskimos—No Married Woman Can Sell a Doll—Must Have Exact Change or Article Required—Eskimo Women Jealous of White Women—Die Young, Mostly of Consumption.

LOSELY allied with the American Indian of the plains is the Eskimo from the northland, or as some authorities declare, "the Esquimaux from the dreary land of ice and snaux."

Like every one else the Eskimo was at the exposition—some about the Alaskan building in the Anthropological quarters and others on the Pike. There the Eskimo was to be seen in his environment of icebergs and polar landscape, living in huts of reindeer skin about a great lake of real water on which the native canoes darted, plied by long-handled oars. The famous Alaskan sledge dogs drew the visitor through an ice colonnade containing twenty tons of Arctic curiosities. The combat between Eskimo and Polar bears brought the exhibition to a thrilling climax.

PERFECT ILLUSION OF ARCTIC LIFE.

The attention of the Piker was arrested and directed to this show by the papier-mache bergs frowning above the Pike. On the ledges of glaciers above, a pack of Alaskan dogs were to be seen dragging a heavily-weighted sledge. The scene recalled the recent days of Alaskan gold fever, and the methods of transportation used by the American gold hunter to penetrate the frozen north, in search of the yellow treasure. The Piker passed under an icy arch to the interior of the show. Before him was a perfect illusion of Arctic life. Native men, women and children, all engaged in their pursuits of hunting and preparing food for their long hibernation when the Arctic night falls. The visitor was treated to a beautiful display of the northern aurora as he passed

from the Ice Colonnade beneath the glacier masses at the rear of the show.

Native sports, marriage ceremonies, and burial rites added to the interest. On the lake an exciting seal hunt was carried on. One of the most interesting features was the Klondike mining camp, where gold tailings mixed with gravel, were washed out by experienced miners.

ESKIMOS ALONE ENJOY THE SNOW.

During the preliminary period before the opening of the exposition, the Eskimos alone, of all the strange travelers gathered on the grounds, enjoyed the snow and cold weather. Clothed in a heavy deerskin suit and wearing high boots of the same material, Nancy Columbo, the Eskimo child at the world's fair, hugely enjoyed the belated midwinter weather. While other persons on the Pike shivered and huddled about little stoves to keep warm, Nancy stood outside the Eskimo village and pelted snowballs at passersby.

THE COLUMBIAN EXPOSITION ESKIMO BABY.

Nancy Columbo bore the same relation to the Columbian Exposition as Louisa Francis Eihinang, the Filipino baby, bore to the Louisiana Purchase. Nancy was born in the Eskimo village at the Chicago fair, and she was named by Mrs. Potter Palmer. Nancy is for Nancy Hanks, the mother of Abraham Lincoln, while Columbo is for Christopher Columbus.

Nancy was a participant at the Pan-American Exposition at Buffalo and at the Trans-Mississippi Exposition in Omaha. She has all the characteristics of an Eskimo, but she speaks English intelligently.

NORTH AND SOUTH FALL OUT OVER RED PEPPERS.

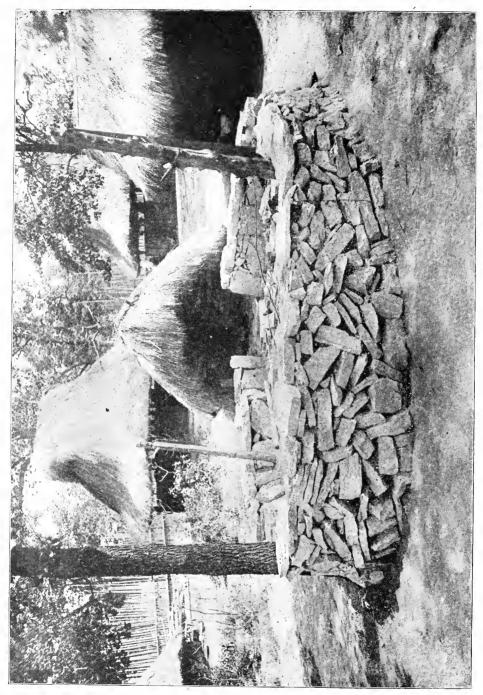
The chilly North and the fiery South came together on the Pike long before the exposition opened.

A party of Eskimos were building their imitation eglooks, or snow-houses, and the chill wind that whistled up the Pike lent an almost cheerful reality to the scene. At the same time a band of Indians from the cliff dwellings of sunny New Mexico wandered down the way, munching red peppers, a string of which one of them carried, to keep up an internal glow.

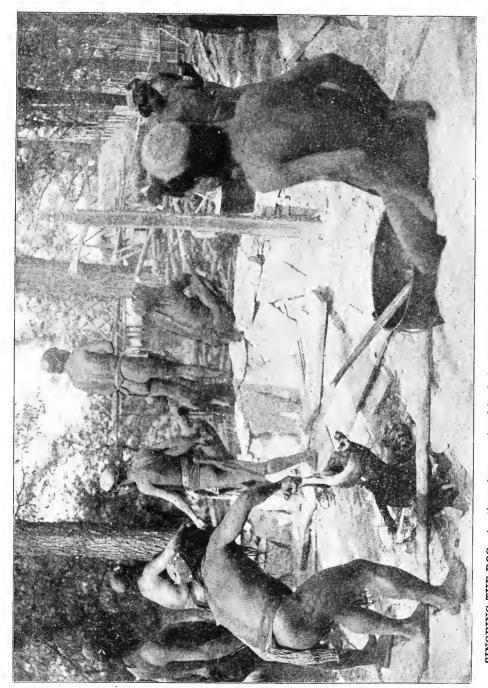
As they came opposite the Eskimos they stopped to gaze and pity.



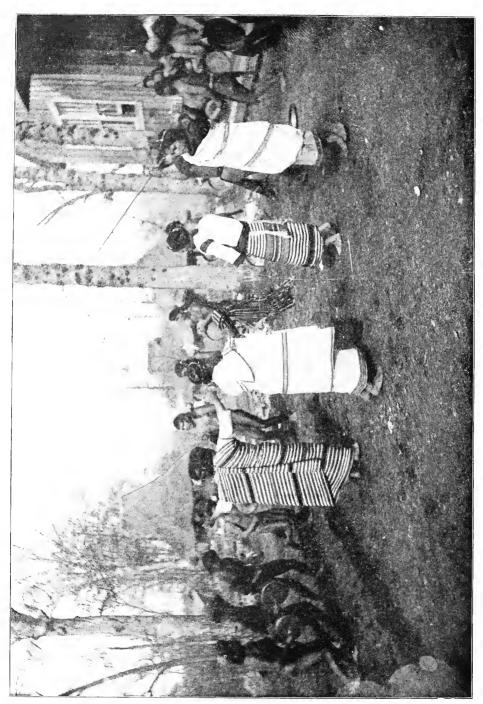
A BOW-WOW FEAST—Dog-eating Igorrotes in the Filippino village, putting a canine to death preparatory to a grand repast. No dish is so tempting to the Igorrote as a stewed, or baked dog, and the stray curs of St. Louis were all led to the slaughter and served as food before the fair had really opened. Strangulation is a favorite manner of execution although other methods are sometimes employed.



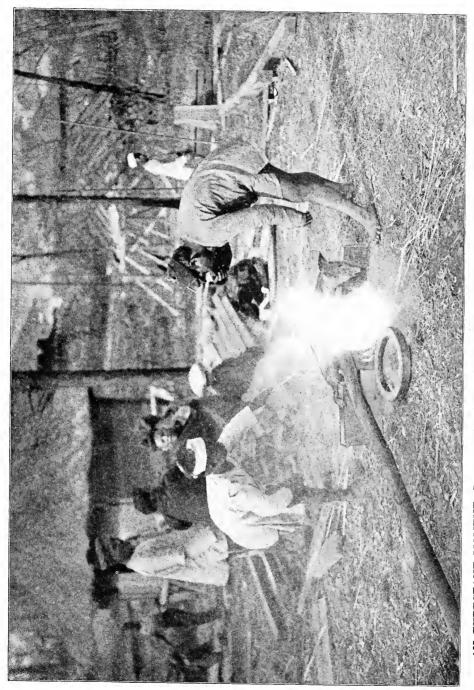
THE IGORROTE JAIL—In the midst of the huts erected by the Igorrotes on the Filipino Reservation was an enclosure of rough-hewn stone, which served, theoretically, for a place of confinement for the insubordinate. Any native who got out of bonds, morally, and was placed in jail, could easily step over the wall, if he wanted to.



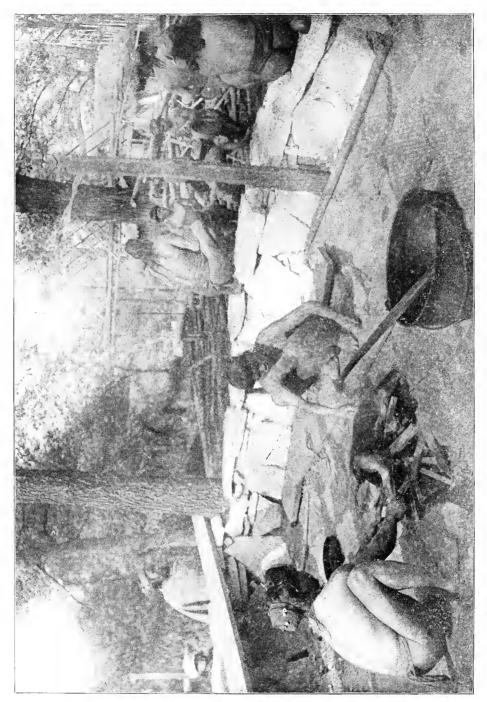
SINGEING THE DOG—Another of our canine friends has just paid the penalty of nature, as was customary whenever he wandered into the vicinity of the Igorrote village. Fido is undergoing the singeing process and after the hair has been burned off, the kettle will receive the remains and eventually turn out a savory stew. The Igorrote in the immediate foreground appears to be the chief cook.



AN IGORBOTE HOUSE WARMING—At the completion of the Igorrote home, there is always a celebration of greater or smaller proportions. When a chief's house is finished quite an elaborate dance is part of the programme. The illustration shows one in progress at the world's fair, the women being in full dress and one at least being accompanied by a younger member of the family.



AN EXPECTANT MOMENT—Igorrotes singeing a dog, preparatory to enjoying a bow-wow stew. Although they burn the hair from the careass, their simple natures rebel at the thought of dressing the animal quite as much as at the idea of dressing themselves. The Igorrotes at the fair attracted general and intense interest.



FIRST STAGE OF STEWED DOG—This is evidently a choice specimen of dog, requiring, as it does, two full grown Igorrotes to put him through the first culinary stage of singeing. When this process is completed, the real stewing and cooking will take place and the hangers-around will draw nearer and nearer as the decortion in the kettle approaches its perfected state. The tom-tom player is also ready to add to the festivities of the occasion.



truly children of nature. Living the most simple existence imaginable, everything they do seems to attract widespread attention. This typical "home" is made of a rank swamp grass, samples of which are shown in the foreground. The Igorrotes, as is here seen, have adopted the clothing of the white man—something unusual.



AN ABORIGINAL FEAST—This picture of an Igorrote bangret with a menu of stewed dog is perhaps one of the most remarkable photographs taken at the fair. The Igorrotes are in the full enjoyment of their repart, flauked by a curious throng of visitors. The primitive utensils used in preparing the meal are also shown.

One of the northmen was up to his waist in a trench and looked so cold that the cliff-dweller handed him the string of peppers, himself pulling one off and taking a warm bite. The peppers looked inviting and the Eskimo wrenched one from the string and began to chew it vigorously.

Suddenly "the call of the wild" echoed down the Pike, as the Eskimo leaped from the trench and dashed for the water bucket. The sunny southern Indians lit out for their cliff dwellings, exuding warmth from their red peppers as they ran with the Eskimo in pursuit.

ANCIENT ALASKAN HISTORY IN TOTEM POLES.

The ancient lore and history of the Indian tribes of Alaska for generations back were set up at the world's fair for all who run to read—if they could. Twenty totem poles, brought from Alaska, were the books in which this history was set out, and the poles ornamented the two native houses that flanked the Alaskan building.

Totem poles always form a striking sight. They are gaudily painted in the rude coloring of native artists. The oldest Alaskan inhabitant cannot remember the origin of these poles, but they are believed to be as old as 150 years.

WOMEN MANAGERS OF ALASKAN EXHIBITS.

According to Mary Hart, manager of the Alaskan exhibit and the only woman ever appointed to public office in Alaska, they are used in graveyards for the nobility and gentry of the country, the hollow space in the rear being used as a receptacle for the ashes and bones of the chiefs of the tribes and their families.

Mrs. Hart was responsible for the presence of a troop of native dancers. There were twenty-eight male dancers, including musicians. Their dance is wild and stirring, but graceful, the performers going through alternately grotesque and graceful contortions to the chanting and the beating of tom-toms by the musicians.

During the performance the dancers wear masks of ermine, which reach down the back to their heels, the masks often representing a great money value. The dance is given for every event of importance in the lives of the Indians, and is a gala affair with them.

Strangely enough it was a woman also who had charge of the Eskimo and Alaskan display in the Manufactures building—Mrs. Ella Ong-

man, who has been to the northern limits of Alaska, in places where no white man has ever penetrated, in her work of securing exhibits for the world's fair. To reach Point Barrow, 72 degrees north, she traveled for days on dog sledges wrapped in furs, in a temperature of 60 degrees below zero. At times the cold was so intense that food could not be cooked, as it would freeze with fire under it. One day her strength failed and the guide buried her in the snow, where she remained guarded by an Eskimo dog for 10 hours.

This interesting woman has given the following account of her experience in the far North, where she collected the strange specimens of clothing, handiwork, weapons, gew-gaws and odds and ends of all kinds shown at the fair:

HOW MRS. ONGMAN COLLECTED HER EXHIBIT.

"I was one of the many who took the Nome gold fever. I went there in the hope of being able to make a fortune in speculation. I had not been there long before I realized that it was impossible for me to do anything in the gold fields, as I was a woman and could not dig and prospect. The Eskimos interested me as a people. I realized they were diminishing in numbers. People outside of Alaska do not appreciate the fact that the Eskimos are rapidly passing away and that these children of the frozen North will soon be but a memory.

"In view of this fact specimens of the Alaskan Eskimos' art and handiwork will soon be gathered up for the world's museums by professional collectors. Appreciating the rareness of their handiwork, I determined upon collecting Eskimo curios, to study their life, their customs, acquirements and skill for an exhibit at the world's fair. I thought it would be a comparatively easy task. I established a store in Nome, and thought I could buy and trade my merchandise for their curios. In this I was mistaken. They did not bring in the rare articles I wanted. The spirit of adventure and that of a curio hunter was strong within me, so I purchased a dog team and secured an Eskimo guide who could speak a few words of English, loaded my sledge with blue and red calico and chewing gum and set out on a thorough curio hunt. I had no idea of the privations and hardships I would have to endure, or I fear I should have never undertaken so perilous a task. But each adventure seemed to make me feverish for the next.

"Point Barrow is located in the extreme northern part of Alaska.

I was informed by my guide that it was rich in curios and rare furs and that no white man had ever been there. I at once determined to go to Point Barrow.

"The road houses between Point Hope and Point Barrow are few and far apart. It was very cold, so cold that we had to walk. We would have frozen if we remained on the sledge. My strength failed me. I did not know what to do. I was afraid I would die. I knew it was impossible for me to walk, and it meant death by freezing if I remained on the sledge.

SAVED BY BEING BURIED IN THE SNOW.

"Then came my first real adventure in the Northland. The guide commanded me to lie down and be buried in the snow. I was afraid to do so. He said it was my only chance and that there was no danger, that he would leave a dog with me. He instructed me not to try to raise my arms as they would freeze.

"After a little hesitation I did as the guide advised. I was covered deep in the snow, with a breathing hole leading to the open air. For ten hours I lay thus buried, far out on a lonely waste, beyond the sound of human voices and human power, not a living creature within miles and miles save the poor dog. I think I can realize how it would feel to be buried alive. Those ten hours seemed like an eternity to me. I thought the guide would never come back with help. When I heard the sound of voices it was the sweetest music I ever heard. There is real danger in being buried in the snow. A blizzard might come up, and the trail would be lost. Then you are done for and they can't find you.

ALL DAY GETTING BREAKFAST.

"From Point Barrow I went to Point Taylor with an Eskimo woman. We were alone. The weather was extremely cold, 60 degrees below zero. It was a quiet day, no wind at all. If there had been we would have frozen to death. We camped for breakfast. We had nothing to prepare for food except a little meal. We built a fire of seal oil and willows to bake hot cakes. It took us from 7 o'clock in the morning until 8 at night to get our breakfast. Both of us were kept as busy as we could be. The dough and grease would freeze over the fire. It was impossible to bake the cakes. The underside would simmer while the top would be frozen stiff. "I would visit the Eskimo in the igloes. In order to get their wares it was necessary for me to remain until they were finished. Their igloes or houses are filthy and vile smelling. It required patience to sit and wait and wait with no one to talk to. All I had to eat on these trips was seal oil and tomcod; no coffee or tea to drink; nothing but seal oil. Seal oil is used for all purposes by the Eskimo. It is their drink, meat, fuel and bath.

SUPERSTITIONS OF ALASKAN ESKIMOS.

"The Alaskan Eskimos are very superstitious. There are some things you cannot buy from them and if you insist they become angry and try to kill you. There is a superstition about the belt a woman wears to carry her child. These belts are very curious, and it is so seldom that a white person can ever get one that I was determined to secure one at least. I tried to buy from every woman I met. They would become angry and say, 'White woman mazurak (bad); me kill white woman.'

"I asked an Eskimo man to get me one. I offered him a good price. He was drinking and stole his wife's belt and brought it to me. I gave him the money and pretty soon a great crowd of Eskimo men and women gathered around me and demanded the belt and threatened to kill me. They attacked me, and before I could get my revolver they had torn my clothing nearly off me. I frightened them away by shooting in the air. The woman came back and offered me \$5 and some trinkets if I would just give her one particular stone out of the belt. The stone she wanted was like a pearl in color and about as large as the end of my thumb. I gave her the stone, glad to settle the matter so easily.

NO MARRIED WOMAN CAN SELL A DOLL.

"Another time I had a very narrow escape from being killed by an Eskimo man. His wife was making me a doll and she died before the doll was quite finished. I wanted him to sell me the doll, as Eskimo dolls are very hard to get. You cannot buy a doll from a woman who has children; they think it a sin for a married woman to sell a doll. The only people allowed to sell dolls are married men and women without children.

"I wanted the man to sell me this doll, but he would not. He insisted upon me paying him the amount I would have had to pay his wife, but I could not have the doll. I did not want his money, but I did want the

doll. He became very angry and tried to kill me. When an Eskimo dies all his belongings are buried with him, and you cannot get them to let you have anything at any price.

MUST HAVE EXACT CHANGE OR ARTICLE REQUIRED.

"Unless you have the exact change, or the article they want to barter for their wares, you cannot buy from them at any price. If they have something for sale for which they ask 50 cents, and you have ever so much money, but not the exact change, and you offer them twice what they ask, they pick up their wares and walk out and say, 'No good, no got money, good-by.' Or if they want calico or chewing gum and you offer them money they won't sell to you. If they ask for calico, they want calico and nothing else will do; if you try to force them to sell to you, they become angry and try to kill you. When you haven't calico in stock, they say, 'No good, no savee calico, no smart white man.'

"If you have plenty of red and blue calico, chewing gum and 50-cent pieces you can find plenty of customers among the Eskimos. They are very partial to red calico, but have no earthly use for silk or wool.

"They are of rather a generous disposition, but they are very suspicious of the white man, and if they find they have been deceived by a white, it is well for the latter to be on his or her guard.

ESKIMO WOMEN JEALOUS OF WHITE WOMEN.

"The Eskimo women are very jealous of the white women and do not allow the latter to talk and laugh with the Eskimo men. I learned this when I was out on a collecting trip away in the interior of Alaska. I was laughing and talking to some of the men, trying to buy some carved ivory, when a number of women made a rush at me and had it not been for the timely assistance of the guide and one Eskimo man who could speak a few words of English, they would have handled me roughly.

DIE YOUNG, MOSTLY OF CONSUMPTION.

"They are rapidly dying out. It will only be a short time when they will be but a memory. They easily contract consumption. In all my travels among them I only met five over the age of 40. They die very young.

"I have made a large and valuable collection, but not for all the gold

in Alaska would I again undergo the privations, hardships and dangers I did. It makes me shudder to think of it now and I wonder how I ever endured it. At the time it did not seem so terrible, but now it looks like a horrible dream.

"I have seen all I care to of Alaska and have studied the poor children of the North until I know all the horrors of their life. They have few joys.

"There is one thing I admire in the mothers. They never leave their children; if they work they carry them on their backs; if they dance the baby is still strapped to the mother's back, and if the mother is dying and has no sister to take care of the baby, she kills it. She will not even trust it to her husband."

It is evident from Mrs. Ongman's graphic tale that the exhibit which she presented to the Louisiana Purchase Exposition represents a terrible experience in her life. There is probably no other exhibit in the world's fair which is more personal in its character, and certainly none which is such a speaking proof of woman's pluck, endurance and ingenuity. As is natural, she has returned to the civilization of her country filled with a feminine pity at the condition of the semisavages of the North, with whom she lived for so many weary months, and is especially touched at the hopeless condition of the Eskimo children.

CHAPTER XXV.

JAPAN AT THE EXPOSITION

Fair Japan on the Pike—Gigantic and Exquisite Main Gateway—Native Stores, Tea Houses and Geisha Girls—Japanese Newspaper Published on the Grounds—First Foreign Country to Complete Its Exhibits—Seven Acres of Space Occupied—Mikado, Nobles and Government Participate—Japanese Fine Arts Section—A Year's Time Spent on Six-Inch Vase—The Famous Cloisonne Ware—The Wireless and Wired Varieties—Lion and Lioness Done in Malleable Iron—Delicate Art of Hammering—Tigers Attacking an Elephant—The Unique Monkey Vase—Colossal Bronze Censer—Gate to the Temple of Japan Reproduced.

APAN made a brave showing at the Louisiana Purchase Exposition. Neither the physical or financial drains of war interfered with her fair plans, which were extensive in all departments. In each the Land of the Rising Sun carried off many laurels.

FAIR JAPAN ON THE PIKE.

"Fair Japan" was the name of her marvelous display on the Pike. It was a picture of the real Japan. Fragile bits of landscaping were taken from the Imperial Gardens of the Mikado. Very old trees transplanted from Japan to the exposition were trained by the gardener to twist grotesquely into shapes of man and beast. The flowers of the Island Kingdom were seen growing in these stretches of nature. Lagoons meandered through the scene, cascades leapt over rocks, ancient historic bridges and lanterns spanned the water, and ornamental and practical boats, imported from Japan, plied the water courses.

The architecture was distinctively Japanese, done by native carpenters, who build without the use of a nail.

GIGANTIC AND EXQUISITE MAIN GATEWAY.

The main entrance to Japan was a replica of the exquisite gateway to the Bio of Ieyasu at Nikko, known as Yoney Mon. This gigantic gateway rose one hundred feet above the Pike. The original was built three centuries ago by Ienitsu, ruler of Japan, as a gateway to the mor-

tuary chapel of Ieyasu, his grandfather at Nikko, the Mecca of art in Japan. Hence the Japanese proverb, "Until you have seen Nikko you must not say Kekko (beautiful)." It was decorated with gold and lacquer, and the exquisite hand carvings are the work of the most famous artists of the period. It could not be duplicated now in the same materials for millions of dollars.

The original of the gateway to the Temple of Nio Mon, three centuries old, was brought from Japan as a feature of the display. It is embellished with original gold lacquer, inlaid silver and wood carvings. The structure is value at \$100,000.

NATIVE STORES, TEA HOUSES AND GEISHA GIRLS.

A street of Asakusa was filled with forty native stores, crowded by porcelain pottery workers, silk rug weavers, ivory carvers, jewelers, painters, fan makers, and candy venders. Troops of street acrobats gave unique performances in the narrow ways.

In tea houses, hanging on the borders of the lake, forty genuine Geisha girls performed their graceful dances, and sang, while native Japanese girls served tea. Other features of the amusement, new to this country, were the rag-making girls of Japan, ranging from ten to fifteen years old; roosters with tails twenty-five feet long; Japanese fortune tellers, who weave a mystic spell with curious metal instruments, and the man who carves images from a single bean of rice. Japanese gold fishes and dogs, with a hundred different kinds of small fishes made an interesting display. A royal dwelling introduced the polite manners of the caste. A Japanese military band filled the entertainment with strange music. Jinrikishaws, propelled by natives, furnished novel transportation, similar to that found in Japan.

JAPANESE NEWSPAPER PUBLISHED ON THE GROUNDS.

Publication of a Japanese newspaper on the world's fair grounds attested the enterprise of the energetic little Yankees of the Orient. The paper consisted of sixteen pages and 4,000 copies were sent to Japan every week. The plant occupied space in the Palace of Liberal Arts and nine Japanese reporters "did" the exposition. The paper appeared every Saturday.

FIRST FOREIGN COUNTRY TO COMPLETE ITS EXHIBITS.

In the Palace of Varied Industries the Japanese government had a reservation of 50,320 square feet. Every square foot of this space was filled according to the original plans of the commission.

Japan had the distinction of being the first foreign country to complete its exhibit in any of the Palaces. In the other Palaces where the Japanese were represented rapid progress was made in installing exhibits, and in advance of all other nations every article sent by that country was in place at the world's fair and ready for inspection.

Although the war in the Orient caused Russia to withdraw its plans in regard to exhibiting at the Louisiana Purchase Exposition, Japan was undaunted and the plans for its exhibit were carried on as though peace and serenity reigned in the Orient.

No foreign country had a better representation at the Universal Exposition than Japan. Besides the reservation of 50,320 square feet in the Palace of Varied Industries, big exhibits were shown in many other buildings.

SEVEN ACRES OF SPACE OCCUPIED.

The total amount of space occupied by Japan at the world's fair was 297,764 square feet, or about seven acres. It was distributed as follows: Official Japanese reservation, 175,000 square feet; Varied Industries, 50,328 square feet; Manufactures, 29,988 square feet; Transportation, 14,904 square feet; Agriculture, 7,452 square feet; Fine Arts, 6,012 square feet; Mines and Metallurgy, 4,968 square feet; Education, 2,988 square feet; Electricity, 1,155 square feet; Forestry, Fish and Game, 4,960 square feet.

Total in square feet, 297,764 (about seven acres).

Only by a visit to Japan, and then by the expenditure of a large amount of money, could one gain as comprehensive a knowledge of Japanese art and workmanship as one was enabled to derive by a day at the world's fair.

The Japanese exhibit was most extensive and there were examples in art and workmanship that bordered on the marvelous. It was by far the most unique exhibit of any foreign country, and one of the most interesting.

The galleries and shops and palaces of Japan had been rummaged

for this exhibit. The leading artisans of the empire contributed and the great workers in brass, bronze, copper, silk, wood, straw and porcelain submitted the examples of their art to the view of the world.

MIKADO, NOBLES AND GOVERNMENT PARTICIPATE.

The government did its full share in this contribution, and the Mikado, too, and the nobles of Japan sent some of their private collection to enhance the beauty of the exhibit, which, roughly speaking, was estimated to be worth fully \$1,000,000.

The bulk of the Japanese exhibit was placed in the Varied Industries building, where the Japanese gateway, which would be called a house in the United States. In the educational building they had another exhibit and a third in the Manufactures building, being also represented in the Departments of Forestry and of Fish.

However, it was in the Varied Industries building that one could gain the best idea of the high art of the Japanese workers in bronzes, coppers and kindred metals.

JAPANESE FINE ARTS SECTION.

In the Japanese Fine Arts section beside a huge vase, which was very beautiful in its way, could be seen a tiny black flower vessel, decorated at its neck in faintly tinted and gold filagree designs. The big, the gorgeous one, in terms of cash, was worth about \$200; the little, the relatively inconspicuous one, was worth several thousand dollars. A Jap's work should always be studied under the microscope.

Japan is a wonderful country, as everybody observes when he tries to exhaust the subject in a sentence. A partial appreciation of even so small a thing as the little vase will show that Japan is remarkable, not wholly because of her fighting ability.

A YEAR'S TIME SPENT ON SIX-INCH VASE.

If you stop and study the vase all that represents its value will become apparent. It is the loving labor of one Japanese artist, who devoted a year's constant application to the single six-inch ornament, and nobody on earth, Jap or Chinaman or Frenchman or American, could duplicate it. The outlines of the design are not gilt lines put in with the brush, nor are they printed in by machine; they are in their intricate

entirety, gold wires, thinner than the thinnest thread, carefully curved into the desired forms. So infinitely small is the scale that the nicety of touch required to thus manipulate the strands of gold is staggering to comprehend.

The gold outlines having been thus prepared upon the silver body of the vase, the artist laid in his colors, choosing the palest of Nature's shades to indicate his foliage or his bird plumage. Then was lacquering done—black being the body color used—and the final polish put on. The enameling has the pitchiness of agate, while from it gleams the coloring and multitudinous strands of gold.

The art craftsman who produced this little work labored himself over every process, supplying both the fine design and the viligant care needed in "burning in" the enamel. He did not make many of the kind at once for commercial consumption, but he concentrated upon the single flower vessel. That was his year's work. That was his purpose of living and of working. And probably when he "closed up shop" to go to fight Russia, he put himself to warfare with an equal devotion.

THE FAMOUS CLOISONNE WARE.

The vase, of course, is of the famous cloisonne work. In the misty past, the beginnings of the cloisonne art in Japan were imported from China. But its development has been purely Japanese, and the production of the valued ware has been followed in particular families, secrets appertaining to the manufacture being handed down through generations. This is true up to the present day. The work is done by individuals, who form a limited circle unto themselves, and whose capacity of production necessarily is limited.

Mr. Shugio, the Japanese Art Commissioner, declared that by far the major portion of the so-called cloisonne which finds its way into the Western market is merely imitation, more or less clever, of the genuine article. And certainly, after studying the examples in the two cases devoted to cloisonne, they show a workmanship far finer than it has been the pleasure of most art lovers to have seen before.

The number of the articles exhibited was not too large to confuse, and yet enough to supply variety. The cloisonne objects were divided into four classes, each of which involves a different process of production. They may be called those with a wire foundation, those with a wire design, the miniatures and the wholly wireless.

THE WIRELESS AND WIRED VARIETIES.

In one case were displayed two large vases, a pair, each easily four feet in height. These were of the wholly wireless. The elaborately done designs upon them were painted upon the metal body of the vase. The greater surfaces show to better advantage the transparently clear coloring of the creamy tints, and give better display to the painting than is possible with the smaller vases.

The objects characterized by the "wire foundation" displayed in a superlative degree the persistent effort which a Japanese will expend upon one ornament. Many wire strands either of gold or silver are carefully arranged side by side—thousands of them.

Upon this as a base are wrought the special designs, and over all is the absolutely transparent enamel. Frequently, the various expedients for beautifying will be expended upon one piece. A section will be done in the wiring, another design will be done by carving into the silver body of the vase, and so on.

LION AND LIONESS DONE IN MALLEABLE IRON.

Near the cloisonne exhibit was a metal representation of a lion and lioness. Each the size of a large dog, and the pair being shown resting together in a strikingly natural manner, your impression at once would be that the piece is molded from a clay model, done in the original by the method usually known to the sculptor. Not so. That lion and lioness were shaped from a mere thin sheet of malleable iron, and the artist's sole instrument was a hammer.

Here, again, months of labor are involved. This hammer sculptor absolutely reversed the usual order. It is as if he considered his lion turned inside out. By deft use of his hammer he shaped the forms from the inside. Then, as the general modeling was developed, he turned his attention to the detail, working both from the outside and inside, dinting his iron carefully as he came to the representation of the more delicate parts of the work—the head, the exact anatomy.

It may be said that lions done in a manner requiring much less of labor and of time would serve the artistic purpose just as well. A faithful bronze of the king of beasts can be made from the model of clay, as prepared by a Western artist whose skill is sufficient. But this fact does not diminish anything of the marvelous quality which belongs to that lion made with a hammer from sheet iron.

DELICATE ART OF HAMMERING.

The art of hammering is carried into some examples of the cloisonne. Upon a few of the latter objects appear raised designs of leaves or flowers. The outlines are first traced upon the outer surface of the vase or ornamental receptacle, and the raised form then is secured by hammering by hand from the inside. If it be a leaf which is pictured, the very slight curve of it is obtained by the delicate use of the mere tool of carpentry. The effect of the stem and of the fine traceries in leaves is secured by means of silver or gold wires which are introduced. Then the true coloring is painted in, and, finally, the lacquering is put on over the whole.

Yes, the Japs are a wonderful people, and, at peace or at war, at the world's fair or at home, they have been written about over and over again. But, somehow, always there is something more to be said. If it is not a vase, it is a fan; if not a fan, it is the silk; and if neither, it is the quaint ways and sharp cleverness of the nervous little fellows themselves.

TIGERS ATTACKING AN ELEPHANT.

Their ideas of art are radically different from those of any other nationality, and for this reason their exhibit had a distinctive tone that could not be seen elsewhere.

One of the bronzes shown from Tokyo was of two ferocious tigers attacking an elephant.

The elephant was plunging ahead, with his head down and his trunk is wrapped around one of the tigers which has sprung upon his shoulder.

The other tiger is on his side, with its front paws digging into his back. The strength of this work is marvelous. The elephant shows his desperate plight in his movement, his eyes are starting and vicious, his tail straight out, and he shows that every bone and nerve and cord in his great bulk is strained in an effort to rid himself of the tigers.

The latter show in their gleaming eyes and taut bodies their determination to hold the giant brute as their prey.

The detail is worked out with wonderful precision. For instance, one sees where the claws of the tigers have scratched the tough hide,

where the hide is drawn up by the deep-sunk claws, and where the blood has started from the doomed elephant.

The trunk that is wrapped around the body of the tiger is strained in a fearful effort to wrest the animal away or to crush out its life, and the tiger shows the pain that caused it.

THE UNIQUE MONKEY VASE.

The most unique vase, perhaps, in the exhibit, was termed the "monkey vase" by the attendants. It was another bit of purely ornamental work, and took its name because there were 2,600 miniature monkeys placed upon it.

The vase was of porcelain of the finest make. Each monkey, about an inch long, was made separately, with its own position and facial expression, and each had been placed upon the vase. They were grouped together in, at first glance, an indistinguishable mass, but closer scrutiny revealed that each is complete and has a relative importance to the one with it.

The vase was from the Imperial palace and of the most exquisite workmanship. The years of careful work that it must have required to make, the patience necessary of the workman in making each animal and placing it on the vase, impresses one with the belief that Job must have been a Japanese.

COLOSSAL BRONZE CENSER, WONDERFULLY ORNAMENTED.

There was one bronze censer exhibited that stood more than eight feet in height. The average man standing by its side seemed like a dwarf. For ornamentation, and careful workmanship, it ranked superior probably to anything of the kind ever exhibited.

On the other side was a dragon reaching up toward the figure of the priestess at the top. On its face were depicted three Japanese priests teaching the religion of Buddha, while the upper section was held on the shoulders of four stalwart Japanese giants, standing upon the ground.

The whole was of exquisite workmanship, the designs in flowers being exact, the dragons showing great power. The latter represent Evil, by the way, and they are unable to reach the priestess or to work evil, in other words, upon the righteous.

It was of the old style, that is, in the workmanship of the early ages of Japan, as, indeed, were most of the bronzes shown.

GATE TO THE TEMPLE OF JAPAN REPRODUCED.

It might be said, that if there had been no other exhibitors in the Palace of Varied Industries, this magnificent showing of the Japanese government would have made a visit to it well worth while.

Looking from the main entrance of the exhibit, an imposing reproduction of the gate of the Temple of Japan, one saw in every direction vases, pictures, carved-wood pieces, burnt pottery, unique paintings, gorgeous hand-painted curtains, ornaments done in gold lacquer, cleverly constructed shell pieces, remarkably executed designs in shell, woods and minerals, and, in fact, a thousand of the richest specimens of everything included in the higher arts of the industrious Japanese.

Aside from their newspaper, the Japs established a bank, at St. Louis, and a colonization office through which arrangements were made for extensive colonization in the Southwest and wholesale operations in rice growing.

JAPANESE BANKER AT ST. LOUIS.

I. Matsumura, for more than five years head of the accounting department of the Yokohama Bank's branch in New York, was delegated to remain in St. Louis and look after the interests of his countrymen who have dealings with his institution until the fair closed.

Mr. Matsumura had an office with the Merchants-Laclede National Bank and acted for that institution in the transaction of business with Japanese clients. Many of the Japanese in St. Louis were unable to express themselves in English, and Mr. Matsumura's service in this respect was invaluable.

The institution with which Mr. Matsumura is connected is known as the Yokohama Specie Bank Limited, and has fifteen offices throughout the world, one in New York City, where Mr. Matsumura was head of the accounting department, and one in San Francisco.

While Mr. Matsumura has in many ways adopted the customs of this country, in making calculations he still uses the ancient Chinese device used in Japan known as the "soloban."

ORIENTAL CALCULATING DEVICE.

The soloban consists of buttons on wires fastened in a rectilinear case. The reason for Mr. Matsumura continuing the use of this tool

of his trade is that he can make estimates upon it far more quickly than the most skilled accountant can with pencil and paper. Problems in addition, subtraction, multiplication and division, involving many figures, were clicked off by Mr. Matsumura with almost incredible rapidity on the soloban, affording an odd sight in a modern banking institution. The same calculating instrument can be found in the hands of most Chinese laundrymen.

Mr. Matsumura was the first Oriental whose services were deemed essential by St. Louis financial institutions. The large deposits made by foreign Governments and citizens from other climes, to establish exhibits at the fair, resulted in the employment of skilled accountants from several foreign countries to facilitate the transaction of business.

NEW FINANCIAL RELATIONS FOLLOWED.

Deposits aggregating more than \$3,000,000 were early secured by St. Louis banks from foreign governments and citizens interested in the fair, and an army of correspondents were set at work securing deposits which ultimately made even this sum seem rather insignificant.

St. Louis institutions seized upon the opportunity to obtain direct recognition from banks in foreign countries. Heretofore all business with foreign institutions had been transacted through New York, but one of the benefits accruing from the fair was the establishment of direct intercourse between St. Louis banks and all foreign financial institutions.

JAPANESE RICE GROWERS FOR LOUISIANA AND TEXAS.

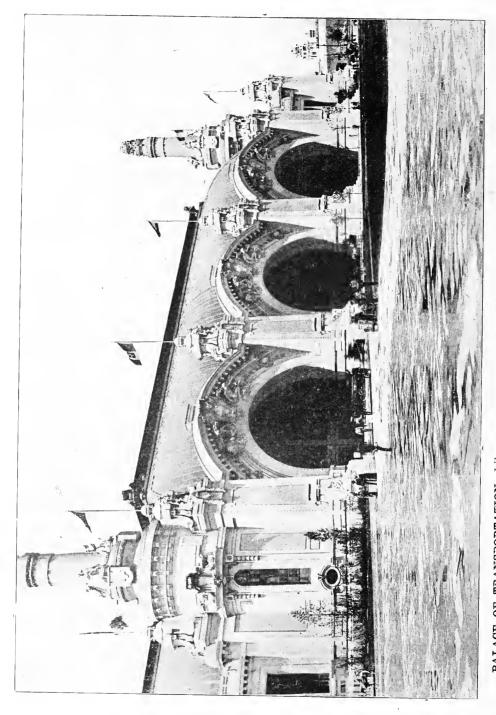
Probably the first direct "development" effect made in the Louisiana territory as a result of the Louisiana Purchase Exposition was the semi-official recognition given by the Japanese Commission to the immigration movement from Japan to the rice-growing country in Louisiana and Texas.

About the first of June a large number of Japanese, in St. Louis, departed for Louisiana and Texas for a trip through the rice country. About the same time a party of more than 100 Japanese reached Houston. The latter settled in the rice country to become rice farmers.

Two members of this party, it is said, brought with them more than \$100,000 with which to purchase rice lands and start Japanese colonies.



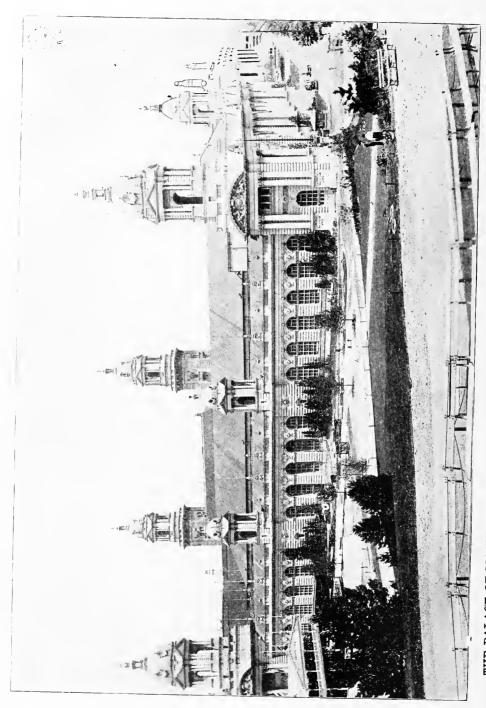
OLD STONE WATER JAR AND FILTER—This rare old relic of early New Orleans shows the method employed by the pioneers of Louisiana to secure pure drinking water. The antique filter was exhibited at the fair before the reproduction of the famous old structure now used as a city court in New Orleans.



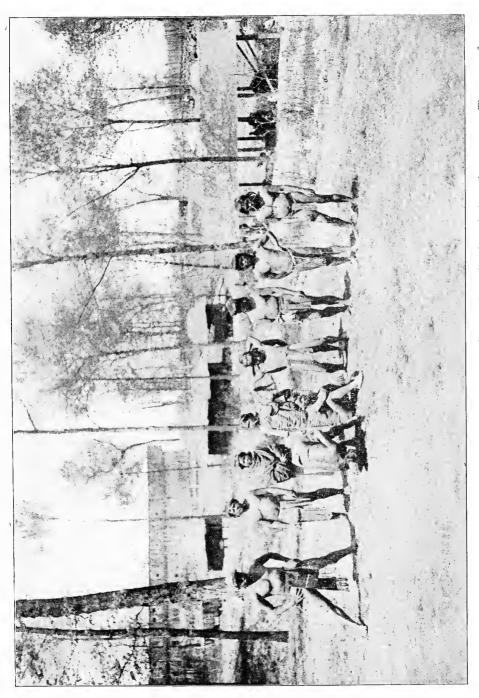
PALACE OF TRANSPORTATION—Like enormous caverns the triple openings of the main entrance to the Transportation building loom up in this picture. The presence of horses and men afford an opportunity for comparison that will give some idea of the gigantic proportions of this palace. In the shadow the heroic sculptured decorations can be faintly seen.



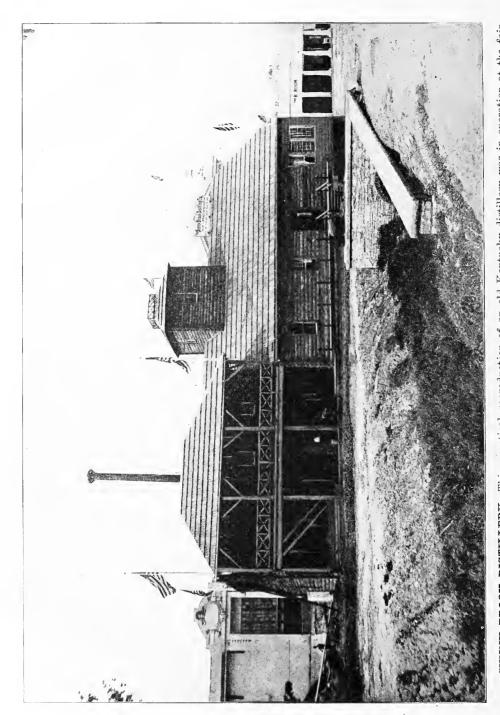
NEGROTE FAMILY ON REVIEW—Although far from their island home and surrounded by strangers, these Negrotes know no care. They have adopted occidental attire and are quite ready to go on dress parade. In the center is the father of the flock and at either side his wife and daughter, the village belle. The youngsters complete the group.



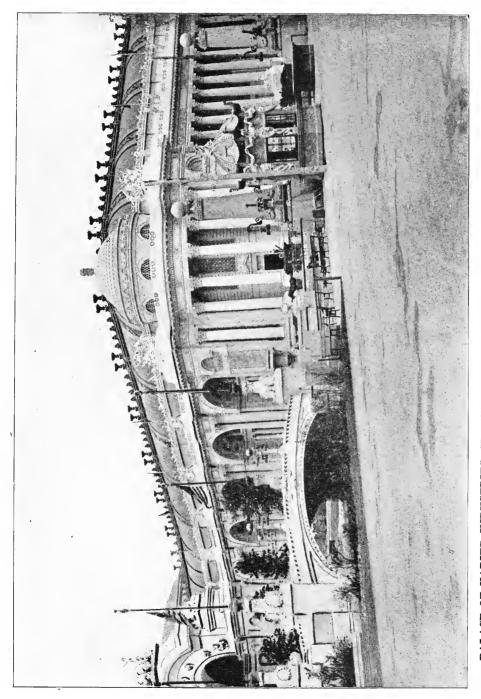
machinery which represented modern Power, as well as that which moved and lighted the entire fair, covered an area of about 400,000 square feet, or an equivalent of some four city blocks. It was set down solidly upon the ground, its ornamentations being mostly above the roof line in a series of lofty belfry-like towers. THE PALACE OF MACHINERY-The structure at the Louisiana Purchase Exposition in which was installed the vast



POSING FOR THE DANCE—These professional Igorrote dancers have lined up before the camera. They are of many types and degrees of costume and differently impressed with the gravity of the occasion. The gentleman leaning against the tree, the one standing on his head and the one in the center, who completely obscures his friend, are the wags of the party.



SUNNY BROOK DISTILLERY—This practical reproduction of an old Kentucky distillery was in operation at the fair daily, producing liquor of the ardent variety. Drinkers and temperance workers alike found something to interest them in this plant of primitive log construction. This feature was one that was found at the World's Columbian Exposition, at Chicago.



PALACE OF VARIED INDUSTRIES—Here is shown a corner and part of the western and southern front of the Palace of Varied Industries, one of the handsomest structures on the world's fair grounds. The section of the colonnade shown gives some idea of the beauty of the two main fronts. The surroundings, too, are all that the most esthetic could ask.



WHEN THE DAY IS DONE—Uncle Sam is represented at the exposition by soldiers, as well as sailors and marines. This cavalryman is making ready for a night's repose after his hard day in the broiling sun. The soldiers at the fair proved a great drawing card and were constantly surrounded by eager questioners.

CHAPTER XXVI.

MYSTERIOUS LITTLE JAPANESE PRIMITIVES

How Prof. Starr Brought the Ainu to the Fair—The Women Love Their Children and Fear an Old Woman's Ghost—Nature Worshipers and Soulless Women—Brave Hunters, But No Warriors—Women Fond of Tattooed Mustaches—They Never Use Mirrors—Do Not Blacken Their Teeth—Stroking Beard or Hair a Mark of Honor—Personal Worth Measured by Bear Skulls—Hand Rubbing, Instead of Hand Shaking—Ainu Women Said to Suckle Bear Cubs—Queer Mixture for Arrow Poison—Painful Tattooing Processes—Not Only Bury, But Hide Their Dead—A Grasping Ainu Baby—St. Louis Ainu Polite and Clean.

O description of Japan and the Japanese is complete without the story of the Ainu people—a hairy race from the north of Japan, unlike any other on the face of the globe.

HOW PROF. STARR BROUGHT THE AINU TO THE FAIR.

Professor Starr, of the University of Chicago, brought to the St. Louis exposition eight of these queerest little people in the world. This was the first time in the history of the world that a colony of them has ever been seen in any other part of the world than those northern islands of the Japanese archipelago which are the Ainus' home.

Ethnologists accredit the Ainu with being one of the most interesting members of the human family. No other man is so hairy as he, nor is there any other primitive race that has so many customs peculiar to itself and different from those of other nations and races.

Professor Starr personally conducted the enterprise of bringing these strange people from their far-away home on the coast of Asia to the St. Louis fair. He left St. Louis in December of 1903 for Japan, secured the assistance of the Japanese government in an expedition to the Isle of Yezzo, chose eight good specimens of the Ainu and brought them back with him the following spring.

It was originally intended that there should be a great congress of primitive races at the St. Louis fair, but the enterprise was abandoned because of its expensiveness. It was estimated that a complete congress of the sort proposed would cost upward of \$2,000,000. In its stead Professor W. J. McGee, chief of the Department of Anthropology for the exposition, resolved to bring to the fair some of the least known and most remarkable of primitive people. He sent for the Ainu, the primitive people of Japan; the Patagonian giants, who live on the rocky shores of Tierra del Fuego, in South America, and the little Pygmies of Central Africa.

MEMBERS OF THE PARTY.

The members included in the Ainu party were Sangea Hiramura, the patriarch of the tribe, and his wife; Sansukuno Kutsurogeainu Hiramura, their son, with his wife, Shuttrateku, and their child, little 2-year-old Kiku; Yuzo Osawa and his spouse, Ume, with their 5-year-old youngster. Kin Goro Bete, a handsome young fellow, was the only bachelor in the party.

Comparatively little is known concerning the strange race, which may be briefly described as follows:

THE HAIRY AINU IN A NUTSHELL.

Ainu means man. The Ainu have no conception of a hell and no laws. They never laugh aloud. The women do the work. Suicide is unknown to them. They are called the hairy people and are the primitives of Japan.

Their origin is virtually unknown. They live in the northernmost islands of Japan. The Ainu never wash, brush or comb the hair. They are the gentlest known race of barbarians.

Ainu women strap their babies upon their back. No Ainu woman takes the name of her husband. They despise cowardice, and they reverence old age. All Ainu have long black hair on their arms and legs. They are a cold-blooded people, without strong emotions. Flogging is the punishment for all crimes except murder.

THE WOMEN LOVE THEIR CHILDREN AND FEAR AN OLD WOMAN'S GHOST.

Ainu women love their children, but they never look after them. All the men are fishermen and hunters, and wear long beards. The Ainu go to bed at sunset and they never stir about at night. An Ainu man who neglects his god-sticks becomes an outcast. The ghost of an old woman is the thing most feared by an Ainu.

They have flat bones in their arms and legs like the cave men of Europe. Metallurgy is entirely unknown to them, and they make nothing in metals. Every Ainu believes that the dog one time possessed the power of speech. The Ainu were once a numerous race, and they possessed all the islands of Japan.

They have no prisons, nor restraint of any sort as a penalty for wrongdoing. Because of their close intermarrying, the Ainu become fewer in numbers each year. The Ainu are great drinkers of liquor, and it has proven a great curse to them. Baldness is very prevalent among the Ainu, and it is regarded as a great curse. The Ainu seldom sleep on anything softer than a board, and they do not use pillows.

NATURE WORSHIPERS AND SOULLESS WOMEN.

They are nature worshipers, and their gods are the sun, the winds and the ocean. The folklore of the Ainu is one of the most complete known among the primitive races. The bear is sacred to the Ainu, and they eat bear flesh at their big religious feasts. When an Ainu woman meets an Ainu man, she always steps aside to let him pass.

The Ainus worship their gods by whittling little sticks and setting them up in their honor. Ainu women are not supposed to have any souls, and are therefore forbidden to pray.

BRAVE HUNTERS, BUT NO WARRIORS.

An Ainu house is always abandoned when one dies in it. Oftentimes it is burned. Letters are entirely unknown to the Ainu. In fact, they seem incapable of any civilization. There are no Ainu warriors. It is believed they are the only non-fighting savages known. The Ainu have no idols, and their temple is a sacred hedge of little willow sticks set in the ground.

The Ainu are great fish eaters, and their principal food at the St. Louis fair was fish and beef. Shaking the head to indicate yes and no is unknown to them. They make these signs with their shoulders. The Ainu are brave, and a hunter does not hesitate to take his knife in hand and attack a bear.

WOMEN FOND OF TATTOOED MUSTACHES.

The Ainu women tattoo mustaches upon their upper lips, and patterns in the palms of their hands. They are dark-skinned, and slow-

witted, and their old men, with their long beards, look like patriarchs. They are almost the same height as the Japanese, but are heavier, and they haven't the almond eye.

The dog has a conspicuous place in the Ainu village. Every Ainu loves dogs, and their villages are full of them. The Ainu children have big stomachs. Oftentimes, they wear a suspender to hold their stomachs up. The Ainu talk in a sing-song fashior and the women pitch their voices into a very disagreeable falsetto.

WOMEN NEVER USE MIRRORS.

The Ainu are not vain about their personal appearance, and even the the women and girls never use mirrors. They sing weird songs, make good boats, always put a leaky roof on their houses, and are great smokers.

The Ainu and Japanese tongues, while very similar in some things, are two distinctly separate languages.

The Ainu know nothing of the use of firearms. Their favorite weapon is the spear. They all carry knives. Ainu names are always from some peculiarity or adventure of the individual, there being no family names. They are regarded as having more customs peculiar to themselves than any other primitive people in the world. The Ainu are an entirely separate race from the Japanese, and were on the islands when the Japanese came.

The Ainu come from a cold country, and the climate at St. Louis was the warmest they had ever experienced. They venerate the pine and the oak tree, and make their clothing from fiber peeled from the inner bark of the elm. Ainu women are famous for their violent tempers, and the men stand in great fear of them when they are aroused.

Bathing is rare among the Ainu, though they are almost amphibious, so long have they lived on the islands of the seas. The Ainu bury food and pipe and tobacco with the dead, and both men and women shave their heads when they are in mourning.

Many of the Ainu women are mat weavers, and mats woven of bull-rushes are made to serve as coverings for windows and doors. The Ainu are fine horsemen, and they are accurate marksmen. Singularly, they are not runners. They regard it as unbecoming.

DO NOT BLACKEN THEIR TEETH.

Ainu women have handsome teeth, white and straight, and they do

not blacken them, as the Japanese were one time compelled to do. The penalty for murder among them is to have the tendons of the arms and legs cut, so the offender may not hunt or fish any more.

It is said that no two Ainu ever build the same kind of a house. Every new house also has some little thing about it that is original with the builder. Strangers in an Ainu home are always made to sleep on the east side of the house. It would be bad luck and worse manners to sleep elsewhere.

PEOPLE OF A SINGLE STRENUOUS IDEA.

Ethnologists call the Ainu the people of a single idea. They think of one thing at a time, and when an Ainu is thinking his mind cannot be diverted. The average height of the Ainu men is given as 5 feet and 2 inches. They have very long arms, and can stretch them a hand beyond their own height.

The Ainu believe that ill-fortune will attend them if their pictures are taken, hence amateur photographers at the Ainu village had a hard time of it.

A. Henry Savage Landor, who has been among the Ainu more than any other Caucasian, estimates that there are 8,000 of them on Yezzo and neighboring islands.

STROKING BEARD OR HAIR A MARK OF HONOR.

When an Ainu man desires to show great deference to another he strokes his long beard, repeating this movement according to the honor he wishes to express. The Ainu have wavy hair, often curly. Black is the predominant color. The hair of the children is lighter, and often auburn. All Ainu hair is coarse and strong.

The Ainu housewife never washes the dishes, and she gets along with very few cooking utensils. They live in thatched houses of rude pattern, and without any floors.

The Ainu woman salutes by stroking her hair and then rubbing the first finger of the right hand across her upper lip. It is said to be much more graceful than it sounds. Tattooing the mustache upon the upper lips of Ainu girls begins in childhood, and they are not considered young ladies until the disfiguring marks have spread out to their cheeks.

The Ainu are the greatest of grimacing humans. Some of them can

make more faces than a monkey. The trick of moving the scalp with the muscles is possessed by many of them.

PERSONAL WORTH MEASURED BY BEAR SKULLS.

Every Ainu man keeps on a rack in his hut the skulls of all the bears, wolves and other animals he has killed. The more bear skulls he has, the higher he is rated by his fellows.

The Ainu and Japanese half-breeds have proven a sickly people, and there are few of them in the country. The Ainu's chief foe has been smallpox, which has greatly decimated the race.

The Ainu's best wish for a friend is "May you be kept warm." This is cited as one of several reasons for believing that they came from the north to the islands which are now their homes.

The Ainu believe music to have the power of curing illness, and, while they have only a few primitive musical instruments, they always sing to the sick. Naturally, some of the sick never recover. The custom of tattooing a mustache upon the lips of the girls and women grew out of the Ainu belief that persons without hair upon their faces are without courage or any other goodly attribute.

HAND RUBBING INSTEAD OF HAND SHAKING.

The Ainu are the longest and most peculiar of handshakers. They simply lay the palms of the hands together and slide them back and forth, making it a hand rubbing more than a hand shaking.

The Ainu have no marriage ceremony, and a man is privileged to have as many wives as he can get. The Ainu couple simply agree to live together, and their advent upon this venture is not celebrated in any wise. They are light reddish-brown in color, and have none of the sallow yellowness of the Mongolian. They have expressive eyes, and almost every Ainu's eyes are light brown in color. Black eyes are rare among them.

Ethnologists have always been puzzled by the fact that the Ainu look more like Europeans than Asiatics. In fact, some of the people who have studied them believe them to have come from northern Europe. Ainu nomenclature still clings to much of Japan. The primitive people had a happy knack of giving pretty and appropriate names to rivers, lakes, mountains, etc., and the Japanese have retained many of these names.

AINU WOMEN SAID TO SUCKLE BEAR CUBS.

Ainu women sometimes suckle bear cubs brought in by the hunters. This is disputed by some white people who have visited them, but others aver that they have seen the women doing it and that there cannot be any doubt of it.

The worst injury that may be done to an Ainu is to hide his god sticks—the little sticks he whittles and places in the ground about his house. The Ainu of the Island of Yezzo, where almost all of them are found, were practically undiscovered up to 100 years ago. They had never seen a white man until, early in the nineteenth century, an adventurous Englishman landed upon their shores.

QUEER MIXTURE FOR ARROW POISON.

Ainu hunters poison their arrows with a queer mess. They take the brains of a crow, some tobacco ashes, and two native insects, and mix them all together, producing a substance so poisonous that an arrow dipped into it will kill a bear, even though the missile inflicts but a slight flesh wound.

The rapid civilization of the Japanese presents a striking contrast to the inability of the Ainu to become anything more than simple barbarians. Their stupidity in this respect has never been satisfactorily explained, and they are ethnically listed with the races who are impossible of civilization and education.

The Ainu are far from ugly, and their heads are no less than picturesque. Gentleness is the striking thing noticeable in their faces. Their foreheads are narrow, and slope gently backward. Their noses are slightly hooked, flat and broad, with wide nostrils. They have large mouths and firm, thick lips. They have exceptionally long ear lohes.

PAINFUL TATTOOING PROCESSES.

Tattooing among the Ainu is very painful. Horizontal slashes are made with a knife, crossed by slanting cuts very close together. The coloring matter is made from the bark of birch wood scraped from the bottom of a kettle. The slashes in the flesh are opened and the coloring is rubbed in without mercy. The flesh swells, and becomes very sore,

and Ainu girls are unable to talk for many days after the tattooing on their lips.

Tattooing of the women is virtually the only primitive characteristic of the Ainu, for they have been largely converted to the Christian faith, and in manner of dress appear almost as well as some of the people of the lower section of Japan.

The tattooed lips of the woman denote that she is married and it has been customary for all women of the island to receive this mark as soon as they were elegible to matrimony. A law recently passed in Japan prohibits this custom, so that the growing generation of the Ainu tribe may look just like other people.

The wilder Ainu of the seashores dress in the skins of birds, with the feathers inside. The dress of the men is shaped like a short tunic, made of bird skins. Some of the more pretentious are trimmed with seal. The woman's dress is much longer, and reaches almost to the feet. It hangs loose and long sleeves cover the hands. The women wear moccasins and long yellow boots, as do the men.

The Ainu of the coast rank very low in civilization, being singularly without the mental acumen necessary to mental development. Some ethnologists consider them inferior to the blacks of the Australian bush or the tree dwellers of India. Their ignorance of the blessings of cleanliness is said to even exceed that of the Tehuelche Indians of Tierra del Fuego, at the extreme end of the South American continent.

NOT ONLY BURY, BUT HIDE THEIR DEAD.

The Ainu not only bury their dead, but hide them as well, and whenever the burying place of a family or village is discovered, it is abandoned, and a new one is selected. It is said that the queer little grave posts stuck into the graves are very difficult for collectors to get because of the secrecy maintained by the Ainu toward their burying places. Sometimes a traveler will run upon an old cemetery in a thick part of the wood.

The Ainu are fortune tellers in a very unique way. After dark the fire is etxinguished, and two small bamboo sticks crossed and tied together, are laid before the fortune teller, who begins to pray aloud. The sticks begin to dance when the spirits begin to speak. You wouldn't be able to see them move, but the superstitious Ainu are very sharp-

eyed, and they can see the sticks dance around, or, at least, profess to see them do so. The fate of the person whose fortune is being told is indicated by the movements of these sticks.

A GRASPING AINU BABY.

The youngest of the Ainu at the fair was two years old. Her name was Kinu. Kinu is the Ainu name for Chrysanthemum. Kinu looked more like a Japanese doll than a baby. She had a disposition that soon won the admiration of visitors to the Indian building, and it was feared that she would be a spoiled baby before the exposition ended.

There was something in the characteristics of Kinu that caused visitors to marvel. She was a keen observer and amazingly quick at conception. Apparently she had a longing to become the possessor of everything she saw.

There was a time a few years ago when Kinu and her parents would have been brought to the United States in fur clothing, had the commissioner been able to persuade them to leave their native island at that time, but of recent years the tribe has made advances in civilization and now wear clothing similar to the Japanese, which race they resemble in some respects.

ST. LOUIS AINU POLITE AND CLEAN.

The polite manners of the Ainu proved their chief mark of distinction. There was some disappointment when the band of primitive folk arrived at St. Louis. They were the hairy Ainu, true enough, but they weren't man-eaters, dog-eaters or wild men.

With their soft manner of expression, kindly bearing and uniform courtesy, however, this particular group of Ainu made a good name for themselves at the great exposition.

Another disappointment in the Ainu was the cleanliness of this particular group, but the arrival of the Patagonian giants forestalled possible regrets in the public mind. The Patagonian giants are primitive folk and incidentally the dirtiest people on the globe. Being also quartered in the Indian building, the Patagonians made up for all the cleanliness of the hairy Ainu.

AINU AND PATAGONIAN WOMEN CONTRASTED.

Two women, one an Ainu from the northern part of Japan, the other

the wife of a Patagonian chief, from the most southerly extremity of the Republic of Argentine, were "next door neighbors" at the Louisiana Purchase Exposition.

These women lived 10,000 miles apart before coming to the world's fair, and neither ever dreamed that such a person as the other existed.

Neither of these women had the faintest idea that the world extended so far south or so far north; that there was a North Pole or a South Pole.

Both constituted types of the most primitive of the world's primitive folk. Both are called Indians, but there the simile ceases.

The Ainu woman was industrious and had a good knowledge of the art of sewing. She wore pretty garments well knit, and colored with an eye for the artistic. The Patagonian woman wore skins placed together in an awkward fashion, and with all their original crudeness preserved.

The Ainu woman had a kind disposition and smiled pleasantly when greeting the world's fair visitors. The Patagonian woman was sullen. The Patagonian was not so sullen to the strange woman from Japan. She saw in her an object of great curiosity, as did the Ainu in her dark sister from the South.

Having languages distinctly foreign to each other, these primitive women found it difficult to promote a cordial visit, but with the characteristic of womankind, they soon succeeded in establishing social relations.

During their stay at the fair the Ainu band surprised visitors by holding Christian religious exercises, and on one or two occasions attended service at an Episcopal church near by.

CHAPTER XXVII.

CHINA AT THE WORLD'S FAIR

Modeled After Imperial Summer Palace—In the Altar Room—Notables Aid the Prince
—Future Emperor's Speech—Prince's Face Beamed With Happiness—Empress
Dowager Donates Pictures to the Government—Chinese Village on the Pike.

ESPLENDENT in the brilliantly colored silk and satin robes which a Chinese prince alone may wear, Prince Pu Lun, heir apparent to the throne of China, presided at the dedication of the Chinese pavilion at the world's fair.

From that one circumstance may be best judged the interest taken by China in the Louisiana Purchase Exposition. Not only Chinese commissioners, aides and diplomatic attaches studied the fair from all standpoints and contributed all in their power to make it a success, but the future occupant of the dragon throne himself attended and was a close observer of everything there. Who can say what influence the exposition may have upon his prospective reign and, in consequence, upon the destinies of ancient Cathay?

MODELED AFTER IMPERIAL SUMMER PALACE.

The Chinese pavilion at the fair was on the south side of Administration way, the second building east of Administration building. It was in three parts, and a duplicate of one of Prince Pu Lun's summer palaces.

The gateway consisted of elaborately decorated arches surmounted by grotesque Chinese figures. Directly in front was a Chinese pagoda, and to the right a goldfish pond, a duplicate of the one at Prince Pu Lun's summer home in China.

The pavilion itself was a one-story building in the Chinese style of architecture, with prominent Chinese gables, painted gray. In the center was a court, and within this a smaller building. At either side of the central building were retiring rooms.

Visitors to the pavilion were received by Chinese servants in the

west retiring room, which contained a Chinese desk, a bamboo couch and a number of Chinese chairs in beautiful inlaid woods. The walls were of varnished wood, and hanging from them were a number of Chinese paintings, the largest of which was a picture of pink lotus flowers.

IN THE ALTAR ROOM.

The middle building was furnished in red and black furniture, the black furniture being of lacquer inlaid with mother-of-pearl. Some of the red furniture was inlaid with gold. An altar, on which rested a small god made of grayish metal, occupied the center of the room.

In the east retiring room was a Chinese bed, wardrobe, washstand and chairs. The bed was gorgeously decorated, hundreds of mirrors being placed above the fringe about the top, and groups of paintings being hung above the canopy. The pillow was hard and was decorated.

All of the furnishings were of the most costly materials and rare designs, and the building, though comparatively small, contained more articles of value than many of the larger foreign structures. For this reason visitors were not allowed to wander through the rooms, but were kept in parties and in charge of guides.

NOTABLES AID THE PRINCE.

Notable among the Chinese who assisted Prince Pu Lun at the opening festivities were Cheng-Tung Liang Cheng, Chinese minister at Washington, and Wong Kai Kah, Chinese Vice Imperial Commissioner to the world's fair. Each wore native official costume, according to his rank.

The ceremonies attending the dedication were marked by an interchange of international compliments and toasts to the Emperor of China and President Roosevelt.

The strange Oriental rooms of the building, decorated in the rare splendor of Imperial China, were throughd with distinguished men and women fashionably attired for the occasion. The Hall of State, the chief room of the building, was crowded when President Francis rapped for order. As soon as quiet was restored Prince Pu Lun, who had been the center of a group of beautiful society woman, spoke his address to Wong Kai Kah, who in turn translated it to the assemblage.

FUTURE EMPEROR'S SPEECH.

Prince Pu Lun said:

"President Francis and officers of the Exposition: As a representative of the Chinese Government, I desire to thank you for this great enterprise, which, uniting all nations, brings us closer together in a social and commercial way. Our Government hopes that the St. Louis exposition may be the result of arousing a more sincere international feeling between China and the United States.

"It is entirely due to the kind offices of the officials of the exposition and the people of St. Louis that the Chinese building is now com-

pleted and is ready to be thrown open to the public.

"As the representative of China and the Chinese Commission, I desire to express most sincere thanks to the officers of this great world's fair and to the people of St. Louis and the United States at large."

PRINCE'S FACE BEAMED WITH HAPPINESS.

President Francis replied:

"China was one of the first great nations to signify its intention to participate in the exposition, and the extent of that participation is the greatest which China has ever attempted. This beautiful building in which we meet to-day is an ornament to the site on which it is constructed, and a credit to the great Government which built it.

"In the name of the Exposition Company and the Government of the United States, I desire to express our most sincere obligations, and I hope that this exposition may serve to strengthen the commercial relations and bring about a closer relationship and better acquaintance which will increase our mutual respect."

President Francis's speech was then translated to Prince Pu Lun, and as he understood its purport his face beamed with happiness. With a gracious smile he bowed to President Francis and the latter acknowledged the salute by a similar gesture.

The prince wore a yellow jacket and a hat set with rubies, both being permitted only in the royal family. In addition there was the far-famed royal peacock feather. He wore a red sash that had been presented to him by the Emperor of Japan when the prince was at Tokyo. His bloomers were short enough to show his boots.

EMPRESS DOWAGER DONATES PICTURES TO THE GOVERNMENT.

In connection with this imperial building a pretty little courtesy was shown the United States by the action of the Empress Dowager of China in donating the pictures displayed within to the government at the close of the fair. These included a series of portraits of herself wonderfully worked.

CHINESE VILLAGE ON THE PIKE.

In addition to the departmental exhibits China was appropriately represented on the Pike. The Chinese Village there was an attraction provided by an association of Chinese merchants of Philadelphia. It consisted of a Chinese theater with native players; a joss house, with a guide to explain the significance of the religious rites and symbols; a tea house, with native waiters, and an extensive bazaar with a population of native merchants, mechanics, painters, and decorators working with their fingers as they have done from time immemorial in the Celestial Empire.

Silk weavers delved at the same looms which were spun by their ancestors thousands of years ago, ivory carvers were at work making small elephants, dogs and cats, native players appeared in a genuine drama of Cathay, and a guard in the uniform of a Chinese soldier preserved order in the enclosure. The production was a vast hive of sounds, with wares offered in the persuasive pigeon English of the artisan from Canton, Foo Chow, or Hong Kong.

CHAPTER XXVIII.

ART AS EXPRESSED AT THE FAIR

Comprehensive Classification of Art—Industrial Art Recognized as Fine Art—A Step Forward at the Chicago Exposition—Grand Open-Air Sculpture at the St. Louis Exposition—Wonderful Characteristic Figures—Art Still Survives Modern Commercialism—Belgium's Complete Exhibit of Later-Day Masters—The Land of Painters—Emile A. Vautier and Belgian Art—Sharp Contrasts in Subjects and Treatment—The Painters Know Country and People—Character as Expressed in Hands—Magnificent French Landscapes and Heroic Figures—Death and the Woodchopper—House of the Madonna—Bouguereau and Other Modern French Masters.

RT is a broad term as applied to the Louisiana Purchase Exposition. Art's manifestations there were infinite and various. The field is inclusive, as is the period—contemporaneous and retrospective. In its largest meaning, art is the substance and the finish of the whole. It is the creation of art-producers and over it is the gloss of art; the highest development of the constructive and decorative.

COMPREHENSIVE CLASSIFICATION OF ART.

In a narrow sense, "art" centered in the Art Department, which, however had a classification more comprehensive than given by any previous exposition. The classification effaced the distinction heretofore setting off "fine art" from "industrial art." It embraced all sotermed art work—upon canvas, in marble, plaster, wood, metal, glass, porcelain, textile and other materials.

"All art work," as Professor Halsey C. Ives has stated, "in which the artist-producer has worked with conviction and knowledge is recognized as equally deserving of respect in proportion to its worth from the standpoints of inspiration and technique."

In this classification a special group was included for the exhibition of art work in glassware, earthenware, metal, leather, wood and textiles, and even examples of artistic bookbinding.

No feature of the Louisiana Purchase Exposition was better calculated to call attention to the progress which the world has made in the

last decade, and to the greatness of the exposition which aimed to mirror this progress than the exhibits which more than twenty countries contributed to the Palace of Fine Arts, and artists and laymen agree that the exhibition of works of art will go down in history as having eclipsed those at Chicago in 1893, and at Paris in 1900.

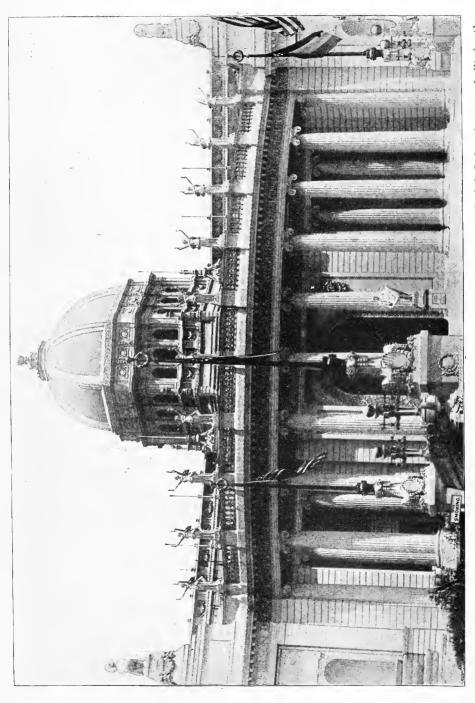
INDUSTRIAL ART RECOGNIZED AS FINE ART.

At Chicago and at Paris the term "fine art" was construed to mean only the work of the sculptor, who essays to copy nature in marble or bronze, or the painter who essays to transfer nature to canvas, but the Commissioners of the Louisiana Purchase Exposition decided to make the exhibit in the Palace of Fine Arts broader in its scope, and to include what has been termed industrial art or applied art. This classification had never been made at any international exposition, but it was believed that the great advancement in artistic craftsmanship, which has marked the last ten years, was deserving of recognition, and in the Palace of Fine Arts were shown not only painting and statuary, but original objects of workmanship in which art is applied to decoration in materials above mentioned. For the exhibition of industrial art special galleries were provided, and this addition did not in any manner interfere with the exhibition of paintings and statuary.

A STEP FORWARD AT THE CHICAGO EXPOSITION.

A step in the direction of recognizing industrial art as fine art was made at Chicago, where it was contended that all art work without regard to the media of its expression should be regarded as fine art in proportion to its strength in inspiration and in technique, but the conditions were not ripe for this broadening of the definition of fine art, and it resulted only in Japan being allowed to exhibit certain examples of applied art and in exhibits of pottery being admitted in the French and American sections. In the exhibition in the Palace of Fine Arts at St. Louis, Japan, England, France, Germany, Holland, Belgium, Austria and other countries co-operated to adequately represent artistic craftsmanship, and an opportunity to compare the results attained by American art workers with the work of those of other countries was afforded. During the last few years many societies have been organized by art workers and this feature of the exhibit appealed to a large class.

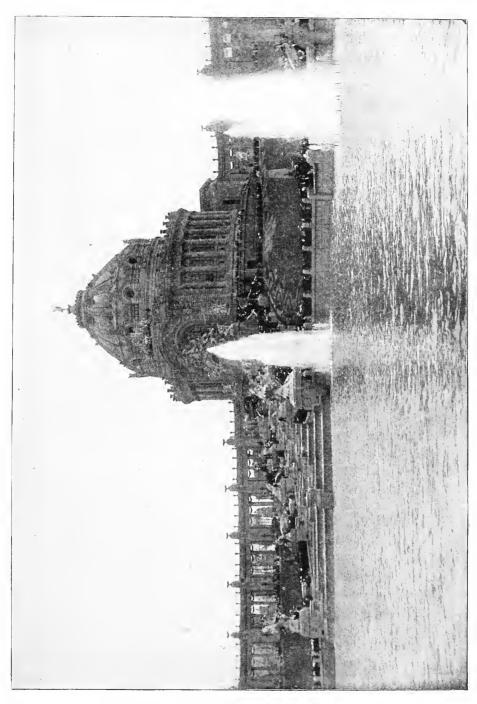
Visitors at the great fair were enabled to contemplate the art work of



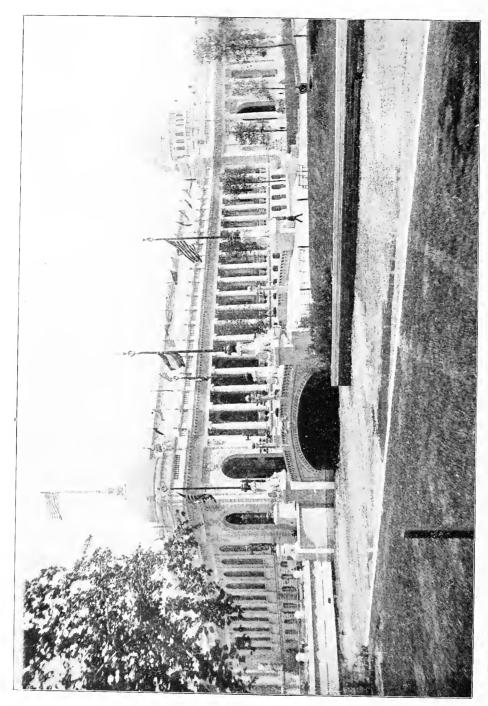
MAIN ENTRANCE OF THE VARIED INDUSTRIES BUILDING—The. Palace of Varied Industries was built in the Renaissance style which typined the charming diversity of its domestic and artistic exhibits. Its striking architectural feature was the southern facade, which was provided with an elaborate entrance thrown back behind a circular portice of futed columns. An ornate dome capped the portice, and from this main entrance a magnificent corridor led to an interior court.



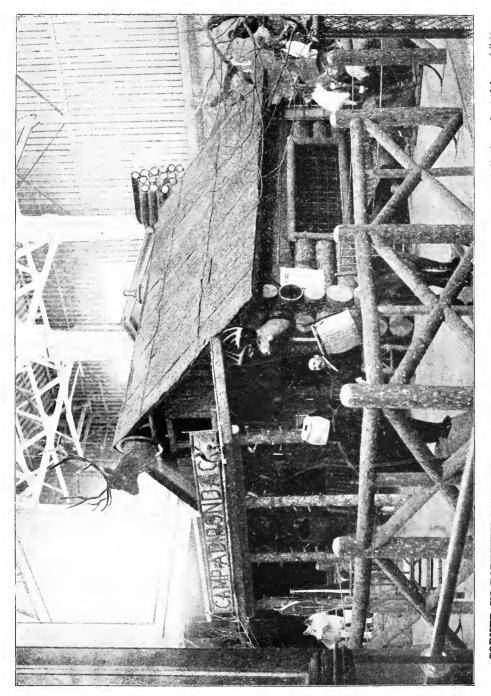
TEPEES OF APACHE INDIANS—Here are seen the tepees of the Apache Indians who hailed from Oklahoma Territory. Their frame-work was made of long sticks, over which was plastered mud. The women, of course, did all the work and the men sat around and smoked industriously. The small flags seen over the tent waved from the Administration building.



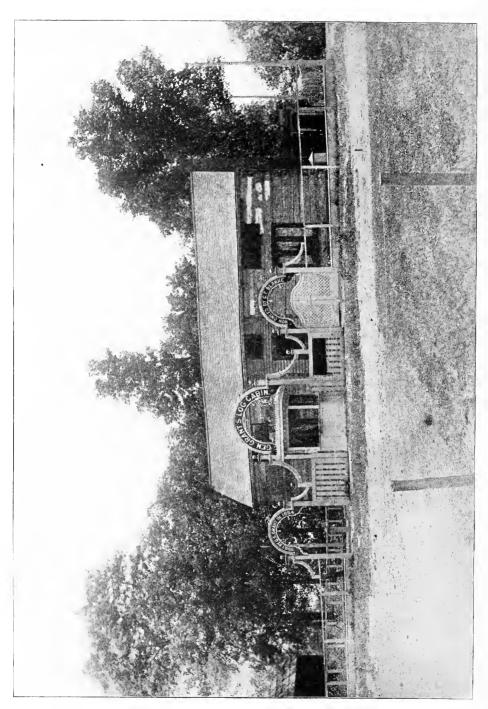
CASCADE FOUNTAINS IN ACTION—This representation of the central section of the Caseades and Terrace of the States gives but a faint idea of its beauty. From Festival Hall, seen in the background, a torrent of water made its way down the giant stairway, passing over myriads of many colored lights and entering a placid lagoon dotted with graceful fountains.



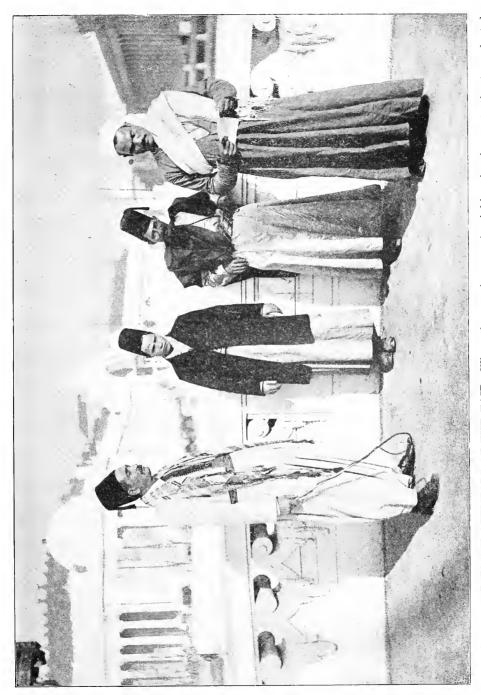
aces at the Louisiana Purchase Exposition. Nothing more graceful than its colonnade can be imagined. Its external beauty is an accurate index to the artistic treasures within. There are assembled statues in bronze, marble and other rich stones from every land and clime in almost endless array, not to refer to other artistic and suggestive exhibits. PALACE OF VARIED INDUSTRIES—This magnificent structure is one of the most attractive of the ten principal pal-



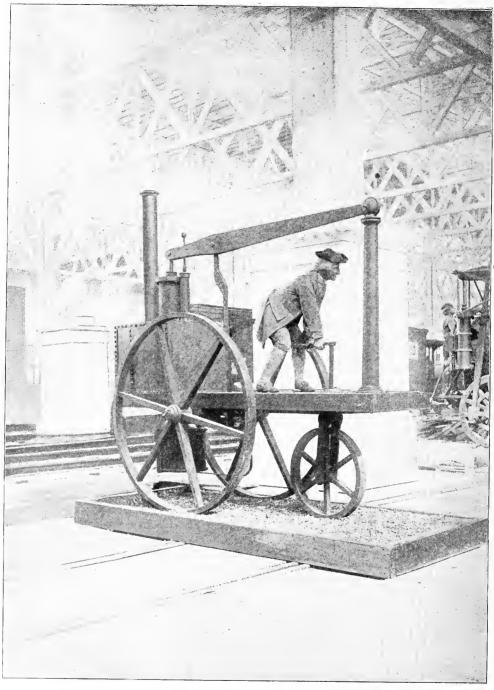
CORNEE IN FORESTRY BUILDING—This view gives some idea of the clever methods of display adopted by exhibitors at the Louisiana Purchase Exposition. Here we have a woodman's camp complete in every detail, surrounded by beasts and birds in natural poses. It would be hard to imagine a neater, a more attractive, or a more ingenious exhibit.



GENERAL GRANT'S LOG CABIN—It is hardly conceivable that this is a facsimile of the log cabin built by the great general only a decade before he was at the head of an army of a million men. In it were passed some of his most anxious and happiest days. It was visited with reverential affection by many veterans of the Civil War and thousands of the younger generations.



GROUP OF TURKISH OFFICIALS AT THE FAIR—When the evening sun is sinking in the west, the transplanted followers of the Prophet turn their faces towards their sanctified land and pray. This photograph shows four distinct types about to enter upon their religious devotions in the dream city. The presence of scoffers does not deter them in the least, nor does climatic conditions.



PIONEER AUTOMOBILE—This scene in the Transportation building shows one of the most unique exhibits in the section devoted to early types of locomotives. What is probably the first attempt toward building an automobile bore fruit in this odd machine propelled by steam power.

every important nation of the world wherein art and artists are acknowledged factors.

GRAND OPEN-AIR SCULPTURE AT THE EXPOSITION.

A first feature of the exposition to strike the lover of the artistic—perhaps after he had admired to his heart's content the sublimity of Masqueray's titanic conception of design; its classic temples, palaces, forums, courts and plazas, and the incomparable harmony of perspectives and bewildering variety of vistas—was the open-air sculpture; statuary reproducing the divinities and heroes of mythology, and expressing ideas of later times. Figures of heroic size, representing ancient and modern history, a wealth of modern historic associations particularly symbolic of the progression of experience and thought, illustrative and poetic—these works, by American artists, were suggestive of the grandeur of antiquity when master-hands created the immortal groups.

WONDERFUL CHARACTERISTIC FIGURES.

For characteristic figures, the visitor needed but to observe Elsie Ward's work, George Rogers Clark; Daniel French's Napoleon; Julia M. Bracken's James Monroe; Philip Martiny's gorgeous stone-picture, "The Triumph of Apollo"; Bissell's group, "The Spirit of Music"; Konti's "Boy and Bear Cub" and his ornaments for the Cascades representing cherubs and dolphins, and especially L. O. Lawrie's great horse group typifying Energy. Each of these was characteristic, suggestive, inspirational. To write of them adequately would necessitate a volume. To see them was the chance of a lifetime.

Of like interest were Potter's De Soto, Niehaus's St. Louis, Borglum's "American Cowboy at Rest," and the figures fronting the Colonnade of States. To this beautiful outdoor gallery of art, under the open sky, with its wonderful parklike setting, its harmonious backgrounds, water and landscape effects, must be ascribed much of the charm of the exposition. It was this assemblage of sculpture which gave the atmosphere of art and of the ideal.

ART STILL SURVIVES MODERN COMMERCIALISM.

It would be unfair perhaps to attempt to compare the exhibits of the various countries, but it is safe to say that almost all of them sent better

collections than were seen at Chicago or Paris, and a striking feature of the exhibition was that a majority of the paintings were of recent date, proving by their character that in the strenuous age of iron and electricity art still survives and has a healthy growth, and artists still find time to step aside from the bustle of commercial life and paint pictures which do not suffer by comparison with the work of the great masters whom the modern student of art is taught to revere.

BELGIUM'S COMPLETE EXHIBIT OF LATER-DAY MASTERS,

In the Belgium exhibit, for instance, 250 pictures were shown and no artist was represented by many examples of his work. All of the work shown was accomplished since the Columbian exposition at Chicago in 1893 and most of it since the Paris exposition of 1900.

Little Belgium, whose chief consequence in an international sense is its past, was one of the first among the nations to respond enthusiastically to the invitation to participate in the fine arts display at the world's fair.

It was the very first to be completely ready for the opening, and was among the very first in the meaning and artistic value of its art showing.

In the space occupied and in the quality of the pictures the works of the Belgian artists were a focal point of the art galleries. Ten rooms were filled with their paintings, almost as much space as was occupied by France or by Great Britain or by Germany. And the latter nations devoted easily one-half of their respective divisions to sculpture, to architecture and to the art crafts, leaving the remainder only to painting. But Belgian art was illustrated in Belgian painting.

THE LAND OF PAINTERS.

This would seem inappropriate. One thinks of France, of Germany and of Great Britain—in the order named—as the art-producing countries. So they are, in a sense; but Belgium is the land of painters. It is right then that Belgium, a dot upon the map of Europe, should have so prominent a place in that department of an exposition which is the record of contemporary art.

The painting of a picture for the picture's sake alone is not encouraged as it was in centuries gone. Commercialism in almost all parts of the world wants painting, and all art put in the form which serves a commercial purpose. Illustration, decoration and the various fields of

the applied arts furnish profits to the artist, while, generally, painting pictures means half rations in a garret. But all this is not so true in Belgium, and in the fact lies the broad significance of Belgium's splendid exhibition of paintings at the world's fair.

If, as is said, a German is a musician by virtue of his German nativity, then a Belgian is a painter by virtue of his Belgian extraction. The peasant of the fields often tries to paint, and so does the artisan of the city. Their song is the story of nature, as explained by the brush upon canvas. They love the picture for the picture's sake. Possibly it is that the guild spirit still lives in Belgium, possibly it is something inexplicable which characterizes the people, but appreciation of the painting is more general in Belgium than in any other one nation.

EMILE A. VAUTIER AND BELGIAN ART.

Belgium's ten galleries were presided over by Emile A. Vautier, a painter himself, devoting his abilities chiefly to small portraits; "interiors," he calls them. He would picture his subjects, not posed for the occasion in the studio light, but as they look in the quiet light of the home. So are they daily seen by those who know them best, and his idea is to show them thus. He was represented by three pictures in the exhibit.

Mr. Vautier was a very busy little man, who enjoyed a perfect sample of the artist or Van Dyke beard. He was not too busy, however, to tell about Belgium's paintings. This he did in his busiest manner and with a commendable hesitancy in mentioning his own pictures.

"We have," he declared, "the best display of modern Belgian work which has been collected into one exhibit, better and larger than at Chicago."

His pronunciation of English was as the American of French, but his confidence in the excellence of Belgian paintings—and with reason—knew no bounds.

The only echo of the "old masters" which pervaded these galleries was in the mural decorations, where the names of the Netherlands list—Rubens, Van Dyke, the Ten Eycks, etc., were painted into the frieze. Otherwise it was all of the modern.

SHARP CONTRASTS IN SUBJECTS AND TREATMENT.

One was struck by sharp contrasts between the pictures in subjects

and in the manner of painting. Beside a quiet and gray study, which seemed distinctly to be of the Netherlands in character, would appear a brilliant example of impressionistic or prismatic work, hardly in tune with one's conception of the Belgian method. Mr. Vautier declared this logical, since the Belgian of to-day is so closely in touch with the great capitals of Europe that the Belgian painters are influenced by the contact.

Though the cosmopolitan trend of modern-day painting was illustrated in this forcible manner, there was plenty that had a national appropriateness, from which to glean glimpses of Belgian life. The landscapes were particularly interesting, observed from this point of view.

THE PAINTERS KNOW COUNTRY AND PEOPLE.

One, for instance, by Victor Gilsoul showed a winding canal, skirted on either side by a line of tall trees. In perspective, the waterway vanished into the distance where the dim outline of a city—Bruges—arose. The picture was delightfully cool and green, full of the fertility of those low, flat lands which have supported large populations these hundreds of years.

The picture showed that the painter knows his own country and loves it well enough to succeed in the interpretation of its simple, low-stretching, fecund farm areas; or of the quaint, time-stained, gray-red buildings of the cities. From such studies as these by Gilsoul, or others by Ferdinand Willaert, or by Franz Courtens, one may get into the spirit of the old-old scenes of Belgium as well as if time and means had permitted of a residence there.

In the figure painting was to be found something of the same differences. On the one hand were the productions of the men who strive for individualism and use "strenuous"—the word has application—technical methods, far from the native Dutch or Belgian. On the other hand were the interpretations of the homely life of the land, of the peasant at his work, of the "gute frau" in her home, of the village, wooden-shoed, busybodies, gossiping.

CHARACTER AS EXPRESSED IN HANDS.

Among the former, the most prominent is Leempoels. Next, Leveque. Leempoels had one canvas, moderately large, in which out of a dark sky looms a stern but intellectual face, and upstretched to the face are many hands, as if raised in appeal. Nothing but hands and the face. It is called "Destiny and Humanity." There seem to be hundreds of hands, so skillfully is the composition arranged.

It is the artist's design and pride that a distinct character is expressed in each pair of hands. He holds that as much of individuality belongs to the hand of every man as to the features of the countenance. The result, both as to treatment and the subject, compels attention, and this picture always had a crowd about it.

Among the more literal painters, interest was divided between Laremans, Van der Ouderac, Earl de Lalaing, Diercky and Vanaise. Van der Ouderac shows something of that excessive love for detail which belonged to the early Dutch painters. He displayed one large canvas which is a careful representation of some sort of Middle Ages function. The cavaliers and the court dames, the retainers and the attendants, down to the very gleam of the diamond upon milady's little finger, are painted with a remarkable industry and a masterly skill.

MAGNIFICENT FRENCH LANDSCAPES AND HEROIC FIGURES.

The French exhibit, which occupied a suite of apartments beginning at the entrance of the west wing, was particularly well arranged, several magnificent landscapes and heroic figures catching the eye on crossing the threshold. The visitor whether an artist, an art patron or an untutored lover of the beautiful, lingered in the first apartment a long time before being lured into the adjoining rooms by equally attractive canvases.

One landscape in the French exhibit which appealed particularly to the laity was a still pool in a small stream running through a deep ravine, overhung by the branches of trees which grow close to its brink. Foam flecks upon the pool show that the stream is turbulent back among the hills, and on the still surface the thick green leaves of water lilies float.

"Gosh, but couldn't a feller catch fish in that hole," said a countryman, who stood before the canvas and admired it for fully half an hour. What prettier compliment could be paid the artist?

DEATH AND THE WOODCHOPPER.

"La Morte et Le Burcheron," by L. l'Hermite was probably "the picture" of the French section of the Fine Arts building.

It was the subject of much interest and much favorable comment at the installation of the French works of art.

Its title in English is "Death and the Woodchopper." It is an illustration of Fontaine's fable of the same title. Its great size and the strength of its figures commanded immediate attention.

The fable relates that once there was a woodchopper who was tired of his grinding work-all-the-time life. While carrying a heavy load of wood one day, he became so discouraged that he called for death.

Instantly Death, wearing white robes, appeared, saying "You called me?"

The woodchopper, so horrified that both he and his wood fell to the ground, was quick with an answer, hoping that that answer would give him back the life that he had been so anxious to discard.

"I only wanted you to help me with my load of wood," replied the woodchopper.

The figures in l'Hermite's pictures are life size. The woodchopper is dressed as a French peasant. His trousers are of blue cotton. On his feet are sabots. His shirt is dark.

His face shows the work that has been his life task. Big furrows mark his brow and cheeks. His hair is rough and seems almost to have risen in fright at the view of Death.

He is shown as he appeared when he fell to the ground, astonished at the sudden answer to his call.

Behind him lies his load of wood. The fagots are evenly cut, but are still covered with bark and look as if they were the small branches of trees.

Death is standing. His head is a skull, and his robes of white hang as if they were draped about a skeleton. With sternness he regards the woodchopper.

HOUSE OF THE MADONNA.

In the chamber beyond the one in which this picture was hung were three pictures by M. Wm. Dubufe that were much admired.

Mr. Dubufe is, a nephew of Gounod, the composer. His large central picture was "La Maison de la Vierge," or the "House of the Madonna." The house is a painting of a little home in Capri. The Madonna is walking down the stairs carrying her child. Both are in white, but over them is a blue light.

On one side of the Madonna were portraits of M. Dubufe's daughters, Juliette and Mirielle. Mademoiselle Mirielle is named for a composition of M. Gounod, which had much popularity in France.

On the other side was a portrait of the two sisters of M. Bouvard.

BOUGUEREAU AND OTHER FRENCH MASTERS.

Lack of the work of masters in the French section proved disappointing to some, despite the excellence of the showing. These times of incessant and ubiquitous expositions seem to have severely tried the good nature of French owners, who, in sheer self-defense, may have been unwilling to strip their walls and run the risk of damage or even loss. Few of the eminent names in the world of art were found in the French section.

Bouguereau was there with his "Les Oreades," a delightful study, where a score of females are seen taking flight at the approach of a trio of ugly centaurs. The subject is treated with the same originality in motif that has characterized all of Bouguereau's works.

Then there were some strong landscapes by Jules Lefebvre, an exquisite nature morte by Gruen J., and a splendid war picture by A. Block, which attracted a great deal of attention, owing to the subject and style of treatment. Studies from the nude were plentiful, and, as in all French exhibitions, among the best.

Not alone in the beautiful art gallery and among the forests of European statuary in the Palace of Varied Industries were examples of high art to be found. Every state and each foreign building of any consequence had more or less of a display by favorite artists. Many and varied were the subjects chosen and the vehicles employed to display the artistic spirit.

INSPIRATION FROM FARM PRODUCTS.

A striking example was found in the Kansas state building. Onions and eggs, which usually appeal to the appetite rather than the artistic temperament, formed the inspiration for several paintings which Miss C. M. Laurent contributed to the art gallery of that state building at the world's fair. From these prosaic subjects she executed some works of art that appealed to the layman as pictures that are true to nature, and to art critics as bits of work that prove the painter an artist.

Four or five eggs broken in a plate, and broken shells lying by a

homely kitchen vessel were so faithfully reproduced on one canvas that the beholder wondered why the eggs did not run all over the floor while the picture was tilted up against the wall waiting to be hung. Another picture was a dozen onions piled by a saucepan, and visitors invariably stopped before this little study of still life and looked at it longer than at much more pretentious paintings which hung near it.

KANSAS AS AN ART CRITIC.

The Kansas building contained quite an extensive art gallery, in which creditable water colors, oils, pen and ink drawings and charcoal sketches were shown.

One of the Kansas artists whose pictures hung in the state building was A. E. Albright, whose work was admitted to the Palace of Fine Arts. Another was John Noble, whose painting "Cleopatra," hanging in the lobby of the Carey Hotel in Wichita, so wrought upon the feelings of Mrs. Carrie Nation that she sent her hatchet through the canvas and almost ruined it.

J. Douglas Patrick, who studied under Lefevre, contributed to the Kansas art gallery "Revenues," which won a medal when it was exhibited in the Paris Salon.

George A. Stone was represented by several examples of his work in oil and in water colors, which were much admired, and Mrs. Bertha Rockwell's Kansas cornfields in water colors were excellent. Miss Charlotte Schenk, Miss Miranne A. Aiken, Miss Pansy Dawes, Miss Cora B. Gould, J. D. Patch, Miss Mary E. Delahay, Miss Edith Farrell and Mrs. W. A. Canfield were each represented by several paintings, and C. D. Paulus exhibited charcoal sketches and clay modeling.

The pictures in the Kansas building were hung by Mrs. C. F. W. Dassler, who was appointed by the Louisiana Purchase Exposition Committee of Kansas to supervise the interior decoration of the building. Mrs. Dassler planned the decorations and selected furniture for the entire building, and Kansas was represented by one of the most attractive and artistic buildings in the Plateau of States.

What was true of Kansas in this connection was equally true of many other states. The description given of its art display merely illustrates how universal and excellent was the effort in that direction.

CHAPTER XXIX.

THE ART PALACE AND ITS GEMS

Description of the Palace of Fine Arts—Professor Halsey C. Ives in Charge—Assistants in the Art Department—Great Britain's Art Exhibit—Masterpieces by Millais, Leighton, Burne-Jones and Others—Works by Germany's Great Artists—Huge Speaking Portraits of the Emperor and Empress—Janssen's Overpowering Revolutionary Scene—In the Realm of German Statuary—Fine Display of Dutch Water Colors—Italy's Rare Paintings—Mexico's Portraits of Americans—Usual Dainty Japanese Exhibit—Filipino Artists' Work Shown—Exhibit Made by the United States.

THE Palace of Fine Arts, one of the few permanent buildings on the exposition grounds, was located on Art Hill, directly south of the Terrace of States and sixty feet above the general grade. Because of its color and architecture, which rendered it out of harmony with the general scheme of the fair, it was screened from view by Festival Hall. It was a fire-proof structure, consisting of four pavilions, so arranged as to form a letter E.

DESCRIPTION OF THE PALACE OF FINE ARTS.

The central building is permanent, being made of brick and Bedford stone, and after the exposition it was occupied by the St. Louis Museum of Fine Arts. The central pavilion, the east pavilion and part of the west pavilion were occupied by exhibits of paintings, engravings, small sculptures and examples of applied art. A sculpture pavilion on the south side of the Palace of Arts completed a quadrangle surrounding a garden with statuary fountains and ornamental plants. The three principal buildings were designed by Cass Gilbert of New York. The sculpture pavilion was designed by E. L. Masqueray, Chief of Designs of the Exposition.

Aside from the regular exhibits of countries, a loan exhibit, devoted especially to interesting works borrowed from institutions and private galleries and representing any period in the history of art, was shown in the Central Pavilion. Ample space was allotted to this exhibition, and

as only masterpieces were accepted, it proved a most interesting feature of the art exhibit.

PROFESSOR HALSEY C. IVES IN CHARGE.

The task of installing the exhibits in the Palace of Fine Arts was under the supervision of Professor Halsey C. Ives of St. Louis, who was assisted by Charles M. Kurtz. Professor Ives was born at Montour Falls, N. Y., in 1847. He studied art in this and other countries. One of his instructors abroad was the Polish artist, Platowski. Professor Ives attended lectures at South Kensington Museum in London, and on numerous visits abroad familiarized himself with the great collections of Europe. He has devoted considerable attention to landscape painting and portrait work. In 1847 he became an instructor in the polytechnic department of Washington University in St. Louis. He was soon made a member of the faculty of the institution.

Through Professor Ives' instrumentality the St. Louis School of Fine Arts was established, and he was made its director. When, in 1881, the St. Louis Museum of Fine Arts was established he was placed in charge of it. He has been connected with five expositions in an executive or advisory capacity, and for many years has been in touch with the art world of Europe, as well as America. For his services in promoting the interests of art Professor Ives was decorated with the "Order of the Vasa" by King Oscar of Sweden and Norway and the "Order of the Dannerborg" by King Christian of Denmark. The governments of Germany, France and Japan have commended him.

ASSISTANTS IN THE ART DEPARTMENT.

Charles M. Kurtz, Assistant Chief of the Art Department, occupied a similar position at the Columbian exposition at Chicago. He was graduated in 1876 from the Washington and Jefferson College of Pennsylvania and studied art at the National Academy of Design. Mr. Kurtz has also had experience in journalism on the editorial staff of several New York papers. He was a director of the St. Louis Art Exposition from 1894 to 1899, advisor of the Department of Art at the Omaha exposition, and Assistant Director of Fine Arts of the United States Commission at Paris in 1900.

George Julian Zolnay, who modeled the statues at the main entrance of the Palace of Transportation, and who is known in America and

Europe as a sculptor, was Superintendent of Sculpture in the Department of Art.

Frederick Wilhelm Sandberg, Superintendent of the Applied Art Section, studied in Munich, Berlin and Paris, and was a member of the International Jury of Awards at the Paris exposition.

All who have become familiar with the art exhibit of the Louisiana Purchase Exposition agree that it will be said in years to come that in the Louisiana Purchase—west of the Mississippi River—there was assembled in 1904 the greatest collection of works of art that had ever been seen at an international exposition.

GREAT BRITAIN'S ART EXHIBIT.

Great Britain seemed to have made a greater effort even than for the memorable exhibit at Brussels in 1897. The walls of the British section were elaborately decorated with designs and friezes where the rose, thistle and shamrock were conspicuous among the general scheme of intertwining shields and scrolls of foliage.

The exhibit was fairly representative of the state of art in Great Britain and Ireland, and in the British empire generally during the last decade. It was considered the best, largest and most important that has ever been sent from Great Britain to any exposition. Leighton, Millais and Burne-Jones were represented, and their works were among the most admired.

MASTERPIECES BY MILLAIS, LEIGHTON, BURNE-JONES AND OTHERS.

Sir J. E. Millais' "Chill October," proved a fine specimen of the artist's great individuality. It is a view of the Tay, representing a backwater, with a fringe of reeds along the bank in the foreground; in the middle distance is a spit of land covered with willows.

In his "Homeric Hymn to Aphrodite," Briton Riviere showed an exquisitely beautiful woman, a laughter-loving goddess, coming down Ida's mount with the gray wolf, the bear and the lion in her train. Lord Leighton's "Perseus and Pegasus with the Head of Medusa," also came in for a considerable deal of attention.

One of the more important paintings, however, was Sir Edward Burne-Jones' masterful crystallization of "The Dream of Launcelot at the Chapel of the San Grael." Launcelot is asleep, leaning against a well-head, his shield hanging on a withered tree, beside which stands

his horse; on the right appears an angel through the door of the chapel of San Grael. Another picture by the same artist was a three-quarter length figure of a girl in deep blue dress entitled "Famma Vestalis."

Attractive because of their classic outlines were the figures of Henrietta Rae, entitled "The Sirens." It was one of the few studies from the nude to be seen in the British section. A powerful work was the portrait of Sir Walter Gilbey, by W. Q. Orchardson. The collection of water colors, sketches and etchings in the British section was found equally interesting, showing that Great Britain had made her best effort to contribute what it considered the art representative of the British empire.

WORKS BY GERMANY'S GREAT ARTISTS.

A remarkably strong exhibit, quantitatively and qualitatively, was to be seen in the German section. In every department was displayed the ambition of German artists and societies as well as the German national institutions to show "their kin beyond the water" what great things have been produced in the fatherland. Celebrated paintings were loaned by the Pinacothek of Munich and the National gallery of Berlin. Even the Emperor stripped his walls of two of his most valuable pictures for the occasion, while sculptors contributed statuary of bronze and marble worth millions of marks.

Entire walls were occupied by the colossal paintings of Anton von Werner, Arthur Kampf, Peter Janssen, and Fritz August Kaulbach, and every inch of the endless flight of rooms was covered with canvases of well-known artists, such as Defregger, Keller, Menzel, Gysis and Lenbach.

HUGE SPEAKING PORTRAITS OF THE EMPEROR AND EMPRESS.

Conspicuous on the walls flanking the main entrance were the huge portraits of the Emperor, on the left, and the Empress, with her youngest child, on the right. In the picture shown the Emperor stands in an imposing attitude before a golden throne clad in the uniform of the cuirassiers, with the long mantle of ermine flowing from his shoulders. The painting is by Ferdinand Keller, and proved worthy of the highest praise.

Kaulbach is the artist for whom the Empress posed. The master was particularly fortunate in this picture, and the expression of imperial dignity in Augusta's face is eleverly softened by that smile of motherly tenderness and affection making her so well beloved among her subjects.

Defregger was represented by a number of paintings, prominent among which was "Das letzte Augfgebot," picturing an exciting scene from the French war in the Tyrol. Three colossal paintings which were exhibited by Anton von Werner are works of the highest art. One represents the scene of the Berlin congress in 1878, showing all the well-known diplomats engaged in discussing the Oriental question. The other is a pathetic ceremony depicting William II, at the head of his staff, congratulating the great field marshal, Von Moltke, on his 90th anniversary. The third painting shows a scene at the deathbed of William I.

JANSSEN'S OVERPOWERING REVOLUTIONARY SCENE.

Overpowering was the effect of Peter Janssen's great revolutionary scene—an excited monk on horseback preaching to a frenzied mob, armed with axes, knives and scythes. The figures are life size, and the composition promises to make the painting a leader among contemporary compositions. Arthur Kampf's "Aufruf" was also a painting of enormous dimensions, distinguished by a fine execution of detail and bearing the stamp of this famous artist's great personality.

Adolph von Wenzel was represented by two of his most famous creations: "The Workshop" and "Emperor William I's Departure for the Seat of War (1870)." A portrait of Prince Bismarck, by Franz von Lenbach, was loaned by its owner, Adolphus Busch, and counts among the best works of "the only Bismarck painter." It would be impossible to mention all the merits of the better-known canvases that were shown in this exhibit; there were Scheuernburg's "Mary," Hollenberg's "Cardinal," sea scenes by Hans von Bartels, "The Concert," by Feuerbach, and many more.

IN THE REALM OF GERMAN STATUARY.

Prominent among the statuary were Fritz Heinemann's \$50,000 bronze statue of Cain, a group of "Adam and Eve" in white marble, by Peter Breuer; a Bismarck bust in marble, by Begas, and Hoesel's bronze rider, "The Hun."

Begas' great sarcophagus group seemed to be the piece de resistance of recent expositions. It has seen four or five of them in the last decade, and was always very much admired. "Hermes Counting Money" and

"Pan and Psyche," by the same master, proved creations of pronounced merit, owing to the classic symmetry of outline and fine composition.

FINE DISPLAY OF DUTCH WATER COLORS.

Quite a revelation was the exhibit of the Dutch artists. Particularly attractive was the fine collection of water colors, mostly from the brushes of Bastert, Schillot, Witsent and Mastenbrook. A very effectual snow scene was that of Louis W. V. Soest, while a typical Amsterdam street scene was pictured in the painting by Chatering. Portraits were exhibited by M. Schwarze and Hubert Vos, and a number of landscapes of the impressionist school by Wilen Maris.

ITALY'S RARE PAINTINGS.

Italy did not perhaps come up to expectation in statuary work in the Fine Arts Palace display, but exhibited a number of paintings of rare merit. A creation of great sincerity was E. Forti's "Poppea at Antium," just as she is about to enter a sumptuously decorated booth. It is a gorgeous picture, in which the artist evidently has given his best. A woman's portrait by Carlo Ferrari was a masterpiece of characterization indicative of great power. A really splendid painting of the impressionist kind was exhibited by Ruggero Forcardi, picturing a gardener sprinkling trees.

MEXICO'S PORTRAITS OF AMERICANS.

Among the first of the countries to get its pictures hung was Mexico. Among them were portraits of George Washington, Abraham Lincoln, Chester Arthur, Grover Cleveland, William McKinley and Theodore Roosevelt, painted by Jose Escudero y Esperonceda.

USUAL DAINTY JAPANESE EXHIBIT.

Japan had the kind of exhibit it had at Chicago and Paris. The same little bits of bronze statuary and crockery daintily arranged in glass cases. Silk embroideries and paintings on silk, showing the scrupulous delicacy of treatment characteristic of the thrifty, belligerent Japanese.

Decided progress was shown in the modern paintings by K. Nahagara, depicting a Japanese woman on the high road, carrying her child on her back. The work is indeed to be appreciated. A street scene by M. Kobajashi, and an impressionist portrayal of a number of pretty Geishas by Shirataki were among the best of the collection.

FILIPINO ARTISTS' WORK SHOWN.

A collection of paintings by native Filipino artists, shown in the art gallery of the Philippine government exhibit, offered a graphic story of the Spanish dynasty, the war which wrought its downfall and the new authority of the United States.

One of the canvases of large size depicted the death of Gen. Lawton, a wonderfully exact reproduction, according to soldiers who were at the scene of death.

The old Spanish regime was represented by a group of Queen Isabelle and the baby king, Alfonso, a canvas of the boy King Alfonso, and several portraits of Spanish governors and generals in the Philippines.

The new authority was personated by portraits of President Roosevelt and Secretary Taft, while the most impressive picture of native life represented "Moros on Guard at Tomb of Chieftain."

EXHIBIT MADE BY THE UNITED STATES.

The galleries of the United States section contained examples of the work of nearly every prominent artist in this country, selected by juries in New York, Boston, Philadelphia and other art centers. Among the notable works in the United States exhibit were a large group portrait of the Misses Hunter by John S. Sargent, which was the principal feature of the exhibition of the Society of American Artists; a collection of portraits by John W. Alexander; a comprehensive exhibit of the works of the late J. McNeil Whistler, and examples of the work of such artists as Horatio Walker, D. W. Tyron, T. W. Dewing, J. Francis Murphy, Charles Melville Dewey, R. Swayne Gifford, William M. Chase, Cecelia Beaux, Frederick S. Church, William H. Low, J. Carroll Beckwith, Eastman Johnson, Gari J. Melchers, Walter McEwan, Charles Sprague Pearce, Jules Stewart, Kenyon Cox, Irving R. Wiles and George H. Bogart. George Inness, A. H. Wyant, Homer Martin, J. H. Twachtman and other American artists, who have recently died, were The United States conformed to the general plan well represented. upon which the art exhibits were organized, that is, of presenting the best work of modern artists especially typical of distinct phases of contemporaneous art.

The exhibits of the United States section were classed under three heads: First, a contemporaneous division, in which were shown works produced since the Chicago exposition in 1893, and in which all exhibits were in competition for awards, consisting of gold, silver and bronze medals and a Grand Prize. Second, a retrospective division, which included work produced between 1803, the year of the Louisiana Purchase, and 1893. Third, a loan division, devoted to especially interesting works borrowed from institutions and private owners, which represented any period in the history of art and included only masterworks of the highest artistic character.

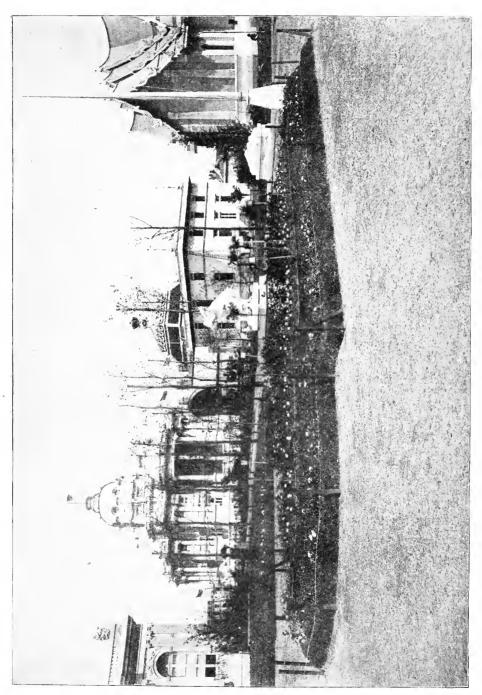
Twenty foreign governments applied for space in the Art Palace, as follows: France, Germany, Great Britain, Holland, Belgium, Russia, Spain, Italy, Austria, Japan, Mexico, Canada, Hungary, Sweden, Denmark, Norway, Cuba, Brazil, Argentina and Greece. Space for national sections was assigned to seventeen of this number. Applications for space exceeded by forty per cent the total amount available in the four pavilions of the Art Palace.

OFFICE DECORATED WITH WORTHLESS BANK NOTES.

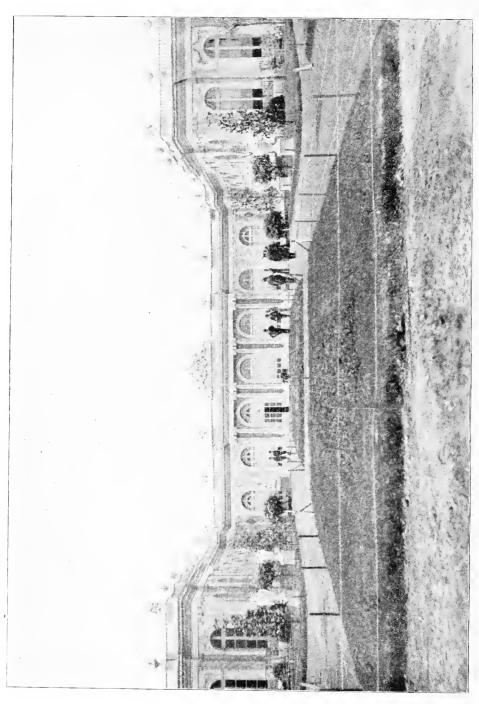
Far removed from the field of art in the accepted sense of the term, yet not the least interesting exhibit from that standpoint, was a display of bank notes of many varieties and marvelous workmanship. Many visitors held that one of the saddest sights of the world's fair was in the office of the Souvenir Coin Department in the Administration building, where Farran Zerbe, chief of the department, used for the decoration of his office \$100,000 in bank notes.

The tragic feature of the display was that every note in the collection was worthless and represented some of the currency of banks that have failed.

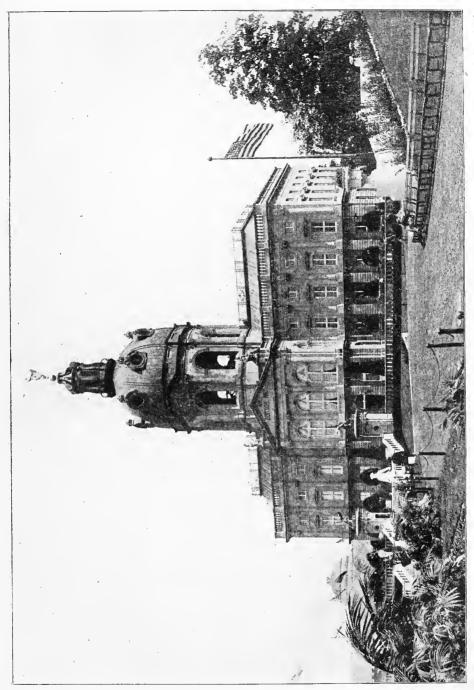
There were about 4,000 bank notes in the collection, with an average value each of \$25. They ranged all the way from \$2 to \$100.



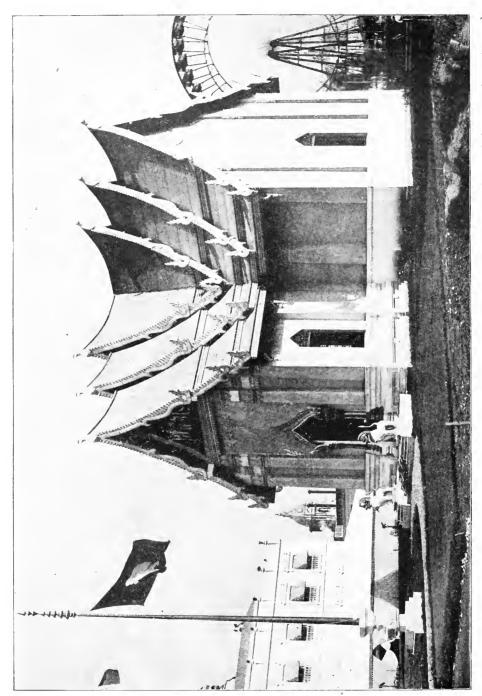
AMONG THE FOREIGN BUILDINGS—The Old and New Worlds appear here as exposition neighbors. To the left projects a corner of the French building, the graceful dome-like home of the Brazilian republic rising across the way. Belgium's pavilion, with its circular projection and roofed elevation, is capped with the crown of royalty, Nicaragua being represented by the severely square building and old Siam by the series of high, sloping roofs.



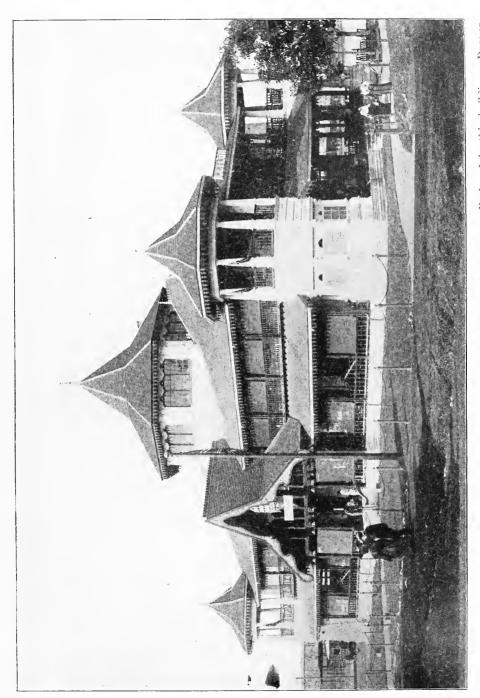
FEENCH BUILDING AND GROUNDS—A distinct departure in world's fair architecture was found in the French building and its environs. Surrounded by high palings and a garden of unusual beauty, the place was a veritable dream. Unlike anything else encountered by the visitor because of the degree of individuality shown, it attracted wide comment.



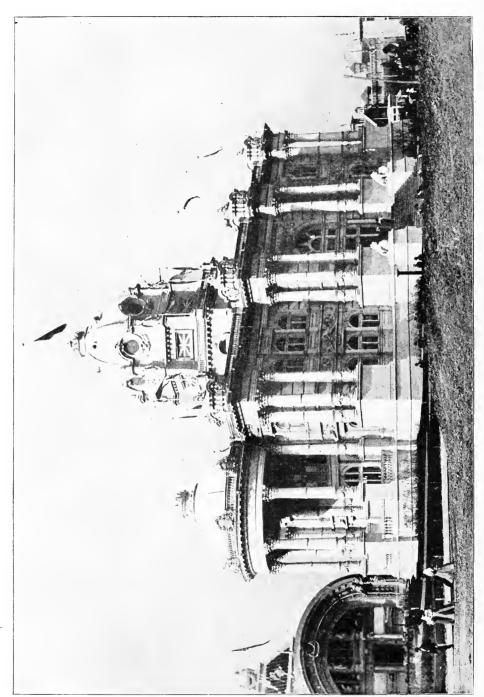
GERMAN BUILDING—Occupying a commanding eminence on the hillside leading to the Terrace of States and Festival Hall, Germany's official building presented a striking appearance. Its individuality and the beauty of the surroundings made it a favorite target for amateur photographers. It became a famous rendezvous for making appointments at the world's fair grounds,



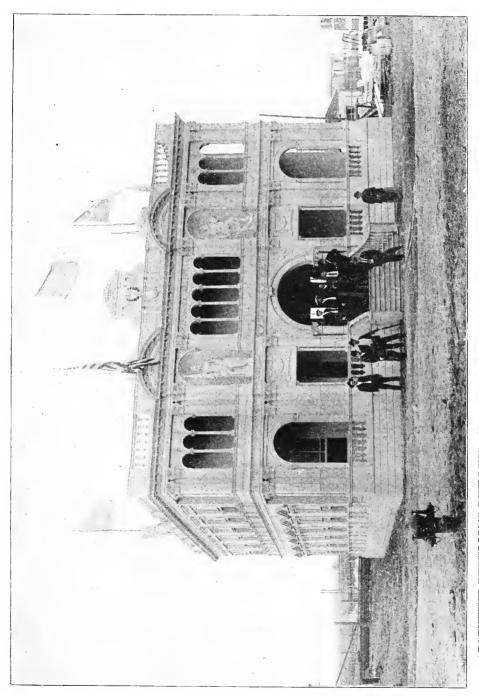
SIAM'S CHARACTERISTIC BUILDING—From the modern Ferris Wheel, seen in the background, it was only a step and one faced a miniature temple, for all the world like those abounding in the land of the sacred white elephant. The building shown was the official headquarters of the Siamese exposition commission,



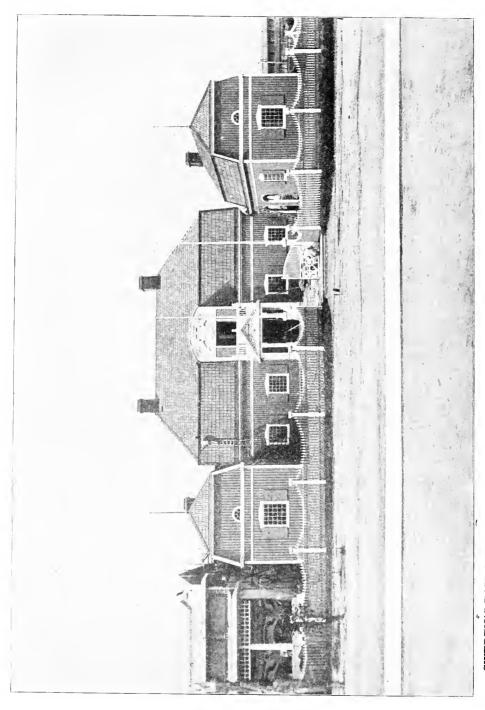
FROM FAR CEXLON—Exhibits from the land made famous by its costly tea were displayed in this building. Dapper little Ceylonese dandies twanged at odd musical instruments, while others beguiled the visitors' money with their wares. Tea and other light refreshments were served, amid delightfully unconventional surroundings, throughout the building.



BRAZIL AT THE FAIR—In common with most of the leading countries of the world Brazil took an active part in making the Louisiana Purchase Exposition a success. The illustration gives a good view of the handsome building erected by our South American neighbor. It was a magnificent structure, built upon particularly graceful lines.



ARGENTINE REPUBLIC'S BUILDING—Here were shown special exhibits from the progressive South American republic and a wonderful amount of data was available for those interested in the development of our Latin-American neighbors. Much of the information proved something of a revelation to inquirers. The same was true of many of the excellent exhibits,



SWEDEN'S FAIR BUILDINGS—This odd group of frame buildings represented the land that has given to the United States so many desirable adopted citizens. Painters were just completing the work of decoration when this picture was taken and they may be seen at their task, although at the time the exposition had been open about a fortnight.

CHAPTER XXX.

FOREIGN BUILDINGS AND EXHIBITS

Gobelin Tapestries in the French Pavilion—Wisp of Napoleon's Hair—Germany's Building, a Second Charlottenburg Castle—The Emperor's Presents Exhibited—Model German Country Home—Orangery of Kensington Palace Reproduced—Description of the British Building—Ireland on the Pike—Old Roman Architecture of Italian Building—Morocco First Represented at an Exposition—Sweden's Building Described—Domestic Exhibits in Holland's Pavilion—Queen Wilhelmina's Skates and Dolls—Windmills in Famous Delft Ware—Belgium's Old Flemish Building—New Zealand at the Fair—Austria's Exposition Building—Magnificent Uniform of Hungarian Commissioner.

EARLY all foreign countries of any consequence were represented at the Louisiana Purchase Exposition by buildings in which were contained more or less unique exhibitions not to be seen elsewhere. For instance, priceless Gobelin tapestries that during the reign of Louis XIV hung on the walls of the Grand Trianon at Versailles, were suspended on the walls of the historic palace's replica, which was the French Government's pavilion at the world's fair.

GOBELIN TAPESTRIES IN THE FRENCH PAVILION.

The tapestries were brought to St. Louis from the Garde Meuble Museum, in Paris and were used for the decoration of the Hall of State, which was furnished entirely in the style of the time of the Grand Monarch, even to the candelabra and the door and window fittings.

Although silk and metal alone were used in the weaving of the tapestries, so exquisite is the work on them that they have all the appearance of paintings. Woven into the fabric, at the bottom of each of the costly hangings, was the title of the scene represented on it.

The scenes were as follows: Coats of arms of Louis XIV, siege of Douay, in 1666, when a cannon ball shot from the beleaguered city killed a horse of the bodyguard of the King as he emerged from a trench; an audience given by Louis at Fontainebleu to Cardinal Chigi, nephew and ambassador of Pope Alexandria XII, July 29, 1664; entry of Louis XIV into Dunkirk, December 12, 1662, after wresting the city from the English.

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WISP OF NAPOLEON'S HAIR IN A GLASS CASE.

To view these treasures in this transplanted duplicate of the great Napoleon's favorite residence was in itself an inspiring experience. The hairs of Napoleon Bonaparte's head were numbered with the Napoleonic trophies shown.

A little wisp of the famous Corsican's hair was contributed by Mrs. Archibald Hopkins of Washington, D. C. It is an heirloom from her grandfather, Edward Everett, who secured it from Lucien Bonaparte while United States minister to England.

The Napoleon hair was encased in a small glass case, as it is highly treasured. It is quite light, with a red tinge. This is explained by the fact that time frequently changes the color of dark hair, often giving it a light, reddish appearance.

SIMPLE DEDICATION OF FRENCH PAVILION.

There was something particularly striking in the simple dedication of the beautiful miniature palace on ground once the property of France. Commissioner-General Lagrave officiated and the ceremony was attended by 300 French workmen and mechanics and the French commissioners to the fair.

M. Lagrave addressed the workmen, thanking them for their labors and alluding to the fact that the fair was built on soil once owned by France, and that the French building occupied one of the most choice sites at the exposition. The latter victory he toasted, and all the French party assembled drank to their building site in champagne. They then burst loyally into singing the "Marseillaise."

Not only was the French pavilion in itself a beautiful sight, but the same was true of the spacious grounds surrounding it, contributing a soothing, restful atmosphere. These grounds were 15 acres in extent. Only one jarring note marred the installation of this appropriate contribution to the architecture of the exposition. Vandals entered the French pavilion at the dead of night, before it was thrown open to the public, and smashed two of the most beautiful of the Parisian marble figures in the sculpture exhibit. "L'Etoile du Berger" (The Shepherd's Star), done by Rousel, and one of the most exquisite pieces in the exhibit, was thrown to the floor and destroyed, as was the "St. Jean" of Dubois.

The French had also to complain to the exposition management of the theft of several beautiful imported rose trees from their garden.

GERMANY'S BUILDING A SECOND CHARLOTTENBURG CASTLE.

Overlooking the main picture of the exposition and a conspicuous figure from every part of the grounds was the magnificent structure designed by Emperor William to represent Germany at the world's fair. It was located well up on a large hill, from the crest of which leapt the beautiful Cascades and about which were clustered the most important landscape features. The imposing building was a partial reproduction of the famous Charlottenburg castle, erected by Frederick I of Prussia at the close of the seventeenth century. Surrounding it an exact duplicate of the Charlottenburg gardens stretched away, styled after photographs of the original and containing many rare plants and shrubs borrowed from the original garden near Berlin. Two stories were contained in the main facade of the castle, and towering one hundred and fifty feet above arose a graceful dome, equipped with chimes, which could be heard over a large portion of the grounds.

THE EMPEROR'S PRESENTS EXHIBITED.

Nearly all the furniture and furnishings were of great historic value and were loaned by the German Emperor. A special train was chartered to transport the treasures to St. Louis on their arrival at New York. They included fifty-two enormous boxes, seventeen of which contained solid silver articles which were presented to the German Emperor on the occasion of his marriage, February 27, 1881.

Among the most noted pieces was a table ornament representing a sailing vessel, symbolic of the united cities of Prussia tendering congratulations. This piece weighed 200 pounds.

In addition to this there were two large candelabra, with seventeen branches each, two wine coolers and two bumpers with allegories of the goddess of hunting. This silver is used only at the German court at great functions, and is seldom otherwise displayed.

The four rooms of the pavilion contained furniture which for the last 200 years has been kept in the Castle of Charlottenburg, and was the property of the first Prussian King, Frederick I.

THE OLBRICH PAVILION, OR MODEL COUNTRY HOME.

Of scarcely less interest was the Olbrich pavilion—also a German contribution to the fair—located in the court of the Palace of Varied Industries. This structure was absolutely modern and built after original ideas. The idea was conceived by Professor Joseph Olbrich of Darmstadt. It is best described as the country home of a rich man, who is a lover of art and spares no expense to gratify his tastes.

The house was built so as to serve as a summer and winter home. The different rooms were finished and furnished by various German firms. Each room was completed after the idea of the artist who designed it. Even the slightest details of the artist were followed, such as new and unique designs for flower pots and match safes. The builder was not permitted to change the plans in the slightest degree.

A REFRESHING RESTING SPOT.

Built around a large court with rippling fountains playing around beautiful statuary, basins of sparkling water surrounded by green grass, shrubbery and blooming flowers, was a large porch which extended around three sides of the court. The rooms of the house opened onto the porch. All of them were finished with richly inlaid woods, preserving their native colors. The walls were decorated with silk and satin, richly blended with the woods. The colors were perfectly harmonious, although two shades of the same color were often used in producing the desired effects.

The rare statuary scattered about the pavilion was the property of the Grand Duke of Hesse and he loaned it to the German Commission for use in the Olbrich Pavilion. Prince and Princess Hohenlohe-Schillingfuerst were the guests of honor at the dedication ceremonies.

ORANGERY OF KENSINGTON PALACE REPRODUCED.

The main part of the British Building at the exposition and its main hall were a reproduction of the Orangery or banqueting hall in Kensington Palace, London, where the late Queen Victoria was born, where she received notification of her accession to the throne, met the Prince Consort and was wooed by him.

The Orangery was originally designed for a greenhouse, and since it was built, two hundred years ago, has never been surpassed as a specimen of garden architecture. It was not only a treasure house for Queen Victoria's choicest plants and flowers, but a place where the Queen and her favored attendants delighted to retire and indulge in quiet conference or in a dainty luncheon.

DESCRIPTION OF THE BRITISH BUILDING.

The reproduction at the world's fair occupied a space of 170 feet 3 inches by 122 feet. The banqueting hall extended the entire length of the building. It was 24 feet wide and was terminated at either end by a beautiful circular apartment 24 feet in diameter. The interior of this hall, which was also a reproduction of that in London, showed fluted, engaged Corinthian columns around the walls, supporting a highly ornate cornice. All the outside columns were Doric with transverse channelings. Niches for statues broke up the wall surface of the banqueting hall.

Behind the banqueting hall was an inner court inclosed on four sides. A Doric colonnade of ten high columns closed the court on one side, while the building formed three sides of the enclosure. In the court fountains and statuary were lavishly displayed. The building was, therefore, developed on eight facades, four interior and four exterior. The court facades showed plain colonial windows with green shutters.

The building was a low structure, rising only 40 feet above the ground at its highest point. Its mass ornamentations were a number of gables forming pleasing hipped roofs. The roofing material was blue slate.

Practically the only sculptural decoration of the structure was a gigantic British shield, which occupied a tympanum above the colonnade inclosing one side of the court.

IRELAND ON THE PIKE.

Twenty beautiful Irish colleens, accompanied the most famous brass band in Ireland and numerous other natives of Ireland, to the total number of 137, made up the living features of the Irish Industrial Exhibition at the world's fair, which had perhaps the choicest location of the Pike. It was Ireland's first great effort to make a separate national showing. Amid appropriate and picturesque surroundings, 233 varying exhibits were shown, covering a broad field of endeavor. The exhibit

of the historical antiquities of Ireland was the most comprehensive that has ever been made at an international exposition.

OLD ROMAN ARCHITECTURE OF ITALIAN BUILDING.

As a unique novelty in the way of a government pavilion Italy reproduced a bit of old Roman architecture, trimmed in stately balustrades and affording a garden such as has inspired artists' and poets' dreams. Standing high above the garden level, the pavilion was reached by a broad and graceful flight of stairs. Standards, crowned with bronzed victories, towered on either side of the entrance. The garden in front of the building was flanked at the sides by a high wall.

The pavilion was used in part for the commissioners' offices and the entertainment of Italian visitors and distinguished guests. Italian concerts were given there, too. Entrance to the pavilion was through a peristyle of Ionic columns. The walls and colonnade were elaborately treated with porcelain entablatures, broken at intervals with pylons carrying spouting fountains.

WONDERFUL EXHIBIT OF HANDICRAFT.

Italy's million dollar exhibit of handicraft in the Palaces of Manufactures and Varied Industries constituted its chief bid for attention at the fair. In the Palace of Varied Industries were shown ceramics, glassware, wrought-iron, and mosaics. In the Palace of Manufactures could be seen beautiful marble statuary, bronzes, carved furniture, silks and laces from the sunny land.

Romanelli was represented by several examples of his wonderful studies of the nude. Fazzi's "Flight of the Bacchante," Garellos "Four Seasons," "Sensualita" by Frille, and "Sweet Dreams" by Albani, were other notable examples exhibited.

The famous collection of urns and statues of the Pompeian museum at Naples was shown in its entirety. It was sold almost as soon as exhibited to an Eastern admirer at a price in excess of \$50,000.

MOROCCO FIRST REPRESENTED AT AN EXPOSITION.

Morocco's building was one that attracted many visitors. One of the chief exhibits consisted of fifty of the finest Arabian steeds direct from the Sultan's stables. A company of Bedouins and Shieks were on hand to show the manners of the Moors. In the palace was shown a display

of fine laces and embroideries, which constitutes the chief manufacturing industry. Morocco was represented officially for the first time at any exposition, her exhibit being secured through the efforts of Mr. J. W. S. Langerman, former United States Consul to Tangiers, and Special Commissioner of the Sultan to the Louisiana exposition.

DEDICATION OF SWEDISH PAVILION.

Sweden's contribution to the Louisiana Purchase Exposition, a beautiful pavilion made after plans of old Swedish architecture, occupied a conspicuous position in Administration avenue, where it was one of the few frame structures to be seen.

At the dedicatory exercises Ferdinand Boberg of Stockholm, architect of the building, hoisted the Swedish flag, and in a brief speech presented the pavilion to the Swedish representatives at the world's fair.

The Reverend C. J. Reinhard of St. Louis responded in behalf of the local Swedish representatives. He spoke in the Swedish tongue and expressed the thanks of the Swedish colony to Mr. Boberg for the work that he and his assistants had accomplished.

SWEDEN'S BUILDING DESCRIBED.

The pavilion was erected by an organization composed of residents of America and Sweden. The large main room of the building was furnished as a library. Large tables and leather chairs, maroon in color, were used.

A life-sized bust of King Oscar II of Sweden and Norway was placed just opposite the doorway, and Swedish pottery and chinaware were used to decorate the room.

The electric light fittings of the pavilion were particularly beautiful. They were of gold and crystal. The gold formed a large circle, which was set with crystal light globes, a large one in the center and eight smaller ones about it.

The ceiling was of white. Its border contained the name of "Sweden" and "Sverige," the old name of Sweden, separated from each other by the lions of Norway and the three crowns of Sweden.

DOMESTIC EXHIBITS IN HOLLAND'S BUILDING.

Holland's modest pavilion was fitted throughout with products of the country it represented. It occupied the site opposite the Administration building, abandoned by Russia on account of the war. Holland's principal display was in the Fine Arts building.

QUEEN WILHELMINA'S SKATES AND DOLLS.

With Queen Wilhelmina's skates, a large collection of paper doll dresses and dolls dressed in Dutch costume, such as the Queen once used, the Holland exhibit in the Manufactures building especially interested children, while their elders found something to their taste in the cream cheese, cocoa and coffee that were shown by Holland in the Palace of Agriculture.

The skates were of a special pattern made by the skatemakers to Her Majesty, who spends most of her time on the ice during the winter months. They had quaintly curved ends and were elaborately ornamented with gold scroll work.

Many of the paper dolls and some of the Dutch costumed ones are copies of those in Queen Wilhelmina's private collection, and they were shown at St. Louis for the first time. Every style of Dutch festal dress was illustrated, and as far as possible the ornaments worn by Dutch women were shown in miniature.

One of the most interesting exhibits was that of the Baltic works, in which a new process for painting on silk was shown. It is on the order of pyrography, and is nothing like the old Kensington pen work that was formerly the rage.

WINDMILLS IN FAMOUS DELFT WARE.

Windmills along the banks of the canals were shown in sectional tiles of the familiar delft ware for the decoration of which typical Dutch scenes were selected.

Van der Steen of Amsterdam exhibited modern gold and silver jewelry, while ancient pieces, including full sets of many famous spoons, were displayed by Otto Braakman.

Amsterdam's chief industry is diamond cutting and the exhibit included a large collection of diamonds in the rough which skilled lapidaries cut and polished, forming one of the most valuable working displays at the fair.

BELGIUM'S OLD FLEMISH BUILDING.

Not even the ten principal palaces attracted more public attention than the pavilion erected by Belgium, a magnificent piece of old Flemish architecture. It was a large and imposing structure, with wide, inviting entrances and a towering dome.

Standing at the head of Administration avenue it faced three of the main thoroughfares of the exposition, and was approached from as many directions. It was the first building east of the Administration building, directly at the foot of Administration hill.

The structure was built of steel brought from Antwerp. It was of a substantial character, and after the world's fair was taken apart and rebuilt for the exposition at Liege, Belgium. It attracted attention principally because its great sides, without windows, were covered with interesting mural paintings. These depicted Belgium's industrial activity and participation in international affairs.

NEW ZEALAND AT THE FAIR.

When the New Zealand commission to the fair returned home upon the completion of its duties, it carried with it a herd of fine elk, the gift of President Roosevelt to New Zealand. The President's gift was the result of his interest in the country.

New Zealand's exhibit in the Palace of Forestry, Fish and Game consisted of a splendid collection of trophies of the chase, wild boar heads, a fine exhibit of Kauri gum, from which varnish is made, and an interesting display of photographs and paintings of Maori life in New Zealand.

The New Zealand exhibit in the Palace of Agriculture was also worthy of note. Woolen blankets, finely worked robes, New Zealand grasses, hemp and such cereals as corn, wheat, barley, peas, beans and hops were displayed.

AUSTRIA'S EXPOSITION BUILDING.

Austria's building at the fair was distinctly Viennese, and the only sample of the art nouveau among the foreign buildings. It was first built in Austria, taken to pieces and reconstructed after its arrival at the exposition. It included thirteen salons, one for each of the govern-

mental departments, in which special exhibits were made. It was surrounded by gardens and embelished with sculpture.

MAGNIFICENT UNIFORM OF HUNGARIAN COMMISSIONER.

It was in the magnificence of its personal representatives that the dual throne of southern and eastern Europe attracted most attention. Of all the foreign uniforms worn by the representatives of European and other countries that of Dr. George de Szogyeny, commissioner of Hungary, attracted the most admiration. The garments were of silk and gold, inlaid with jewels worth \$6,000, and decorated in the most elaborate fashion. White trousers, close-fitting to the commissioner's legs, were embroidered in old Hungarian style, and the "mente," a sort of garment hanging from one shoulder, was made of heavy damask and silk, richly inlaid with old family jewels. The whole costume, the commissioner's secretary said, was worth \$7,000, while the sword alone represented a value of \$500.

The magnificent uniform was a relic of the old Hunnish days and a fine example of almost "barbaric splendor," albeit the Hungarians have long since been recognized as among the most virile and progressive of European peoples. With all their intelligence and developed traits of several centuries of European culture, they still retain some of that savage spirit which, as Oriental invaders, once made them the dread of the West; hence, the persistency with which they have retained their racial unity in the dual empire.

CHAPTER XXXI.

FOREIGN COUNTRIES AT THE FAIR

Unique Brazilian Feather Exhibit—Reproduction of Famous Agra Tomb—Canadian Government Pavilion—Mexico's Building, in Spanish Renaissance Style—An Elaborate Social Event—A Well-Appointed Cuban Dwelling Reproduced—Nicaragua's Tiny Gem of a Building—Guatemala's Coffee, Fruit and Woods—Cingalese Cabinets of Precious Woods—Illumination, Old and New—Argentine Republic's Official Building—Rare Old Wines of Portugal—Siam's Temple at the Fair—Burma and Her Sly Elephant, Mary—Other Visitors from Afar—Russia's Embarrassing Plight.

HERE was not a more beautiful building on the exposition grounds than that erected by Brazil. Its location was practically the same as Belgium's, immediately to the south of the latter. It was surmounted by several domes, one rising to a height of 132 feet.

UNIQUE BRAZILIAN FEATHER EXHIBIT.

Feathers formed an important part of the Brazilian exhibit. They were not shown in the ordinary way, but were made into flowers and placed in baskets and bouquets.

Col. F. M. de Souza Aguiar, Commissioner General from Brazil, thus explained the feather exhibit made from his country:

"It is the work of Rio Janeiro women. No other than women could do that delicate work. They take the feathers of the humming bird, which has a most beautiful plumage in our country, and also the feathers of the parrot. With these they make fans and flowers.

"The fans are not carried by Brazilian women. They are used for the decoration of rooms. For the leaves of the flowers, they take fish scales. The result is wonderful and beautiful."

REPRODUCTION OF FAMOUS AGRA TOMB.

Distant India was represented by a somber yet inspiring reproduction of the tomb of Etmad-Dowlah, which occupied a site near the Philippine reservation, at the rear of the Forestry, Fish and Game building. The original of this tomb at Agra, India, has many of the bulbous dome

accessories which have made a world-wide reputation for the Taj Mahal at the same place. These were faithfully reproduced at the fair. In the pavilion, samples of tea, coffee, cardamom and pepper were served by the natives. The interior furnishings were typical of East Indian life. Many historic relics hoarded by the ancient races were displayed in the decorations. Plant life as it exists in India was demonstrated in the gardens, specimens having been brought from the burial places of India's ancient royalty.

CANADIAN GOVERNMENT PAVILION.

Our national neighbor on the North, Canada, was represented by a spacious club-house, located half way between Agriculture Palace and the Forestry, Fish and Game building, and directly opposite the National pavilion of Ceylon.

More than \$30,000 was devoted by the Canadian government to the erection of the building and beautifying the grounds. No exhibits were made in the pavilion. The furnishings were appropriately reminiscent of the Dominion, however. Commissioner General Hutchinson's official home was made at the Canadian building, where he proved a hospitable host to visiting Canadians and, in fact, to all comers.

MEXICO'S BUILDING IN SPANISH RENAISSANCE STYLE.

A fine showing was made by our national neighbor to the south. Mexico's pavilion was two stories high, designed in the style of the Spanish Renaissance. The windows of the lower story were of stained glass. Those of the upper floor were photographic negatives, showing cathedrals, monuments, palaces, parks and delightful examples of scenery in Mexico. A large picture of President Diaz in stained glass was one of the many features. In the center of the pavilion was a patio, always a feature of Mexican architecture. Cacti and plants, common to Mexico, were used in beautifying this court and the grounds about the pavilion. The first floor was devoted to a public reception room, reading room, telegraph office, and other apartments. On the second story were rooms for the Mexican Commission, for the press correspondents, etc.

AN ELABORATE SOCIAL EVENT.

A ball and reception, which constituted one of the most elaborate affairs held on the exposition grounds marked the opening of the Mexi-

can building. Included in the invitation list were all the exposition officials, all state and foreign commissioners to the world's fair and many Washington diplomats. Mayor Wells and many city officials, as well as prominent citizens of St. Louis, who were not connected with the world's fair, were present.

Senor Azpiroz, Mexican Ambassador to Washington, who was the guest of honor, was accompanied by his wife, two daughters and a son. His daughters are conspicuous in official Washington society.

Mexico's booth in the Palace of Liberal Arts greatly interested the visitors to the building. Displays of drugs, perfumes and dental work were among the features of the Mexican exhibit. A large collection of photographs and architectural drawings was also shown.

A WELL-APPOINTED CUBAN DWELLING REPRODUCED.

This healthy national youngster and protege of Uncle Sam was on hand at the fair with a building typically Cuban. It was a reproduction of a well-appointed dwelling of the present day in the city of Havana, with a tower at one corner, rising to a height of forty-eight feet.

The structure was surrounded by a portico twenty feet wide. Above was a promenade always throughd on pleasant evenings.

NICARAGUA'S TINY GEM OF A BUILDING.

Nicaragua had the unique distinction of presenting the smallest building in the international group. The tiny structure was almost completely hidden in a garden filled with luxuriant tropical vegetation.

A patio, or court, gave it a tropical character noticeable in the pavilions of other southern countries. The lower floor of the building was devoted to a large hall, for exhibits, and the upper section was used for a State room and apartments for the commissioners. Vegetation brought from the Isthmus and replanted by native gardeners gave it a tropical atmosphere.

The Nicaraguan Commission included Doctor Leopoldo R. Ramirez, Chief Commissioner; Rosendo Rubio, secretary, and Senors Alejandro Bermudez and Juan Eslaya, with fifty other Nicaraguans employed in various capacities. Doctor Ramirez is Minister of Public Works of Nicaragua and has been Minister of War and Ambassador to Honduras.

GUATEMALA'S COFFEE, FRUIT AND WOODS.

This little Central American republic had an excellent display in charge of Senor Manuel M. Jeron. It included 300 bales and boxes consisting largely of coffee, which was shown in all its grades and in all its stages of growth. There were also many kinds of fruit, Guatemalan mahogany, cedar and 178 other woods and a large exhibit of Indian work, as well as several quetzals, or birds of paradise.

CINGALESE CABINETS OF PRECIOUS WOODS.

Ceylon's building at the world's fair was the repository of probably the two most valuable pieces of furniture on the grounds. The pieces were two cabinets of precious wood and rare carving, the combined values of which amounted to over \$3,000.

The cabinets constituted only a small part of the show things that abounded in the Ceylon court. One of them was of ebony, beautifully carved in design, representing the flora, fauna and humankind of the island. It is the property of a lady of Ceylon residing in London and was loaned for exhibition. It is valued at \$1,750.

The other was of calamander wood, one of the rarest kinds of precious wood in the island, and it was also exquisitely carved. This cabinet was purchased by the Government of the island for exhibition at St. Louis and was valued at about the same amount as the other cabinet. Both pieces of furniture are the handiwork of Cingalese artisans.

ILLUMINATION, OLD AND NEW.

The oldest and the newest in light were combined in the illumination of the Ceylon building. Lamps hundreds of years old blazed forth with electricity.

A large number of ancient lamps, closely resembling the Roman and Egyptian in their designs, were displayed at the Ceylon building. They were placed where they could be seen to the best advantage in the building and at the same time contribute as much as possible to its illumination. They were wired and instead of the feeble flame for which they were made they scattered the rays of the electric light of the twentieth century.

CEYLON TEA.

A quantity of quaint and pretty pottery painted by native artists was another feature of the exhibit. Tea was the principal display, how-

ever. The consumption of Ceylon tea has grown remarkably in the last few years. Ten years ago the Ceylon product had practically no sale, while today one-fourth of the tea used comes from the islands. Natives made tea at all hours at the building and served it to tired visitors.

ARGENTINE REPUBLIC'S OFFICIAL BUILDING.

This enterprising South American republic reproduced the second and third stories of the government palace at Buenos Ayres as its official building. The structure was located north of the Administration building and near the Austrian reservation. The two stories of the building included a large central chamber, where receptions and exhibitions were held, and smaller rooms for the offices of the commissioners.

RARE OLD WINES OF PORTUGAL.

Rare old wines constituted Portugal's principal display. Some of the wine it was declared authoritatively was so old that the age of it has been forgotten, even by the owners, and in price it was the most costly wine ever imported to America.

It was contained in quart bottles, and the actual value of the wine was \$30 per quart. It was a wonderful wine, so the Portuguese commissioners said, and one drink of it would place a man on the borders of the happy hunting grounds. Two drinks of the wine would make the imbiber believe himself a part owner of the earth, and three drinks make him feel greater and wealthier than J. Pierpont Morgan before the slump in United States steel.

So tempting did the wine prove that \$2,000 worth was stolen before the fair was two weeks old. A special detail had to be employed to guard it against depredations of connoisseurs.

SIAM'S TEMPLE AT THE FAIR.

Siam reproduced as its official building Ben Chama Temple, an historic Siamese structure. It had an advantageous location between the Mexican and Nicaraguan pavilions. The building was shaped like a Greek cross, having four arms of equal length radiating from a center. It carried a high pitched roof, with a concave ridgepole like those on the Chinese buildings. This pole terminated in a pointed ornament, commonly seen on the temples of Siam. The interior consisted of one large apartment and a small room, used as the executive office. No posts

marred the interior, the roof being carried on Siamese trusses of peculiar construction.

BURMA AND HER SLY ELEPHANT, MARY.

Eighty Burmese, accompanied by six elephants, represented that strange land.

The elephants the Burmese brought with them were more satisfactorily inspected from a safe distance, as they were insulated from infection with American elephant diseases by a thick coat of loud-smelling grease.

One of these pachyderms—Mary by name—created consternation upon her arrival. The first thing she was visited by United States customs inspectors and they placed around her neck a nice, large tag, on which her name, age, birth and previous condition of servitude were inscribed, and also that she was a creature of bondage. It was tied with ribbons and bore a flashy red seal.

Mary eyed the tag suspiciously at first and with growing resentment until she curled her trunk around, tore the tag from her neck and ate it.

Something about the tag, the red seal or the allusion to bondage, irritated Mary and she began to make things unpleasant. She was chained to the floor of a freight car, but this did not feaze Mary, for she simply leaned her two tons of flesh against the side of the car, and, lo, there was no car.

Then Mary laid in wait. A workman came by whistling blithely to his work. Mary reached out her proboscis and hit him on the coattails, and the workman made the end of the station platform in one jump.

Near the car was an empty barrel, of which Mary possessed herself. She rolled it about and juggled it for awhile like a little girl playing with a rubber ball.

A group of workmen stood on the edge of the station platform laughing at her antics.

Sly Mary. She let them watch and laugh for a few moments, when suddenly she got a good grip on the barrel and sent it spinning among them like a Jap torpedo running amuck in the Port Arthur squadron.

It knocked them right and left and smashed the barrel into a pile of staves.



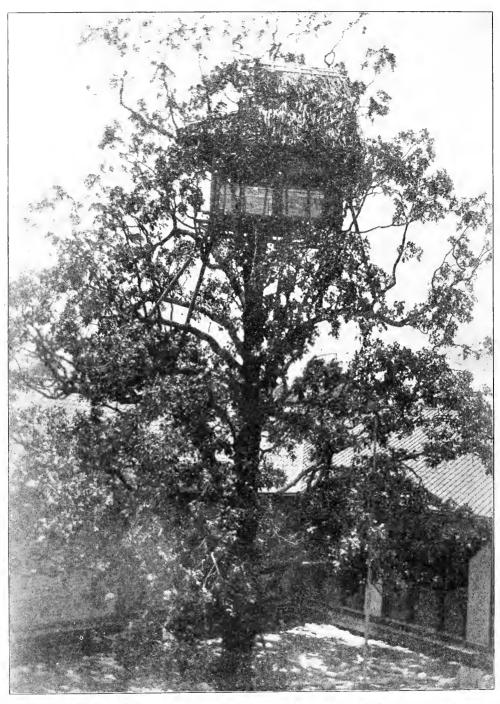
EXHIBITOR FROM FAR CATHAY—Manager of China's exhibit caught by the camera in a happy moment. Numerous Chinese officials were stationed at the fair, ranging in importance from prince to merchant. All became social favorites, this unusual opportunity for intercourse revealing many delightful oriental characteristics.



AINU MOTHER AND CHILD—Surprise is depicted on the countenance of this dusky visitor from the wilds of Japan's northern islands, viewing for the first time the wonders of the Occident after getting settled in the Ainu home camp in the exposition enclosure.



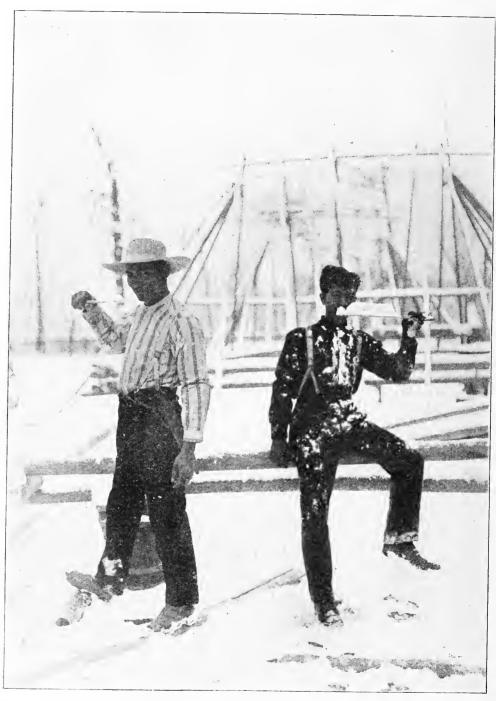
AINU CHIEF AND PRAYER-POLE—This benign and religious veteran's daily devotions proved a never ending source of wonder to visiting hosts at the exposition. The grotesque prayer-pole is shown with its customary fantastic decorations.



TREE DWELLERS AT THE FAIR—Among other curiosities at the St. Lonis fair a number of tree dwellers were shown, living as they ordinarily do in the tops of tall trees. The lofty habitation depicted was occupied by a family of tribesmen from Java.



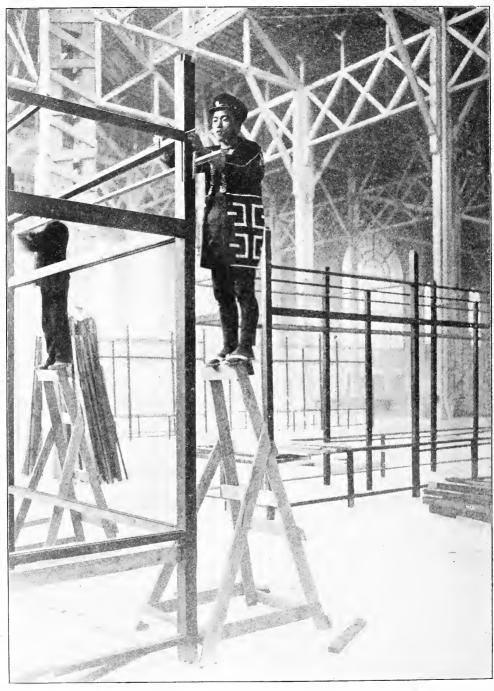
KAFIR WOMAN AND CHILD—There was no prouder woman at the exposition than this little mother with her kinky hair, shiny skin and earnest face. Far from their African home, she was an interested observer of all that fell within the range of her wide-open eyes.



THEIR FIRST SNOW—Shortly after the arrival of the Filipinos, before the opening of the fair, an unusually late fall of snow surprised them. To the astonishment of beholders they rushed forth to eat the rare deposit. It was the first snow they had ever seen.



TWO FASHION PLATES—Here are shown Datto Facundo, the Berry Wall of the Mandanaos, in fancy dress, and Sumlia, leader of the feminine "400," in their most cherished garbs. The couple are excellent types of Filipino "swells" and hugely enjoyed displaying their bright clothes.



JAPANESE CARPENTERS AT WORK AT THE FAIR—These nimble little fellows were to be encountered everywhere during the early days of the exposition. Working with marvelous dexterity, they transformed bare and dreary places into fairy bowers. Few artisans can compare with the Japs for speed or the artistic finish they give their task.

Mary's fiery Indian temper was allowed to simmer in the car until she digested her tag and the government seal, when she was taken to her new summer home on the world's fair grounds. Once there she seemed to realize the dignity of her position and remained on good behavior throughout the exposition.

OTHER VISITORS FROM AFAR.

Australia had a fine display of her mining and agricultural products; Ethiopia of her people, rich ivory and other products; there were Boers and British from South Africa; 100 Persians; a party of Tibetans whom Kipling terms the best soldiers on earth, and a party of Afghans. With them were zebras, snakes and other domestic animals. A party of Soudanese from Africa formed another interesting study.

RUSSIA'S EMBARRASSING PLIGHT.

As is generally known, Russia withdrew from official participation with the advent of war, relinquishing the space that had been granted her and abandoning great chests and casks of rich exhibits already forwarded to St. Louis.

The Division of Exhibits was requested by an unofficial commission of prominent Russian artists and manufacturers to allot the original space given to the Russian Government prior to its withdrawal from official participation in the fair. This could not be done, but the exposition allotted space in the Fine Arts, Varied Industries, Manufactures and Education palaces.

The commission was headed by Prince Troubezkaye and was composed of some of the distinguished men of the Czar's Empire. It made a praiseworthy showing, in view of the embarrassments confronting it.

In addition there was a very interesting Russian exhibit on the Pike, due to the energy of the Criterion Concession Company and Ellis Glickman, a Russian-American actor of note. Aside from the excellent Imperial Russian Opera Troupe, elsewhere described, the Trans-Siberian railway journey is well worth describing in connection with things Russian at the fair.

A TRIP TO SIBERIA.

The "trip" was taken in a real train of Pullman coaches, drawn by a real locomotive and including a modern car service, making one of the most original features at the fair. Entering a Russian railway station at Moscow, the visitor bought his tickets and boarded the train, standing under a long shed.

A seat was taken in one of four Pullman cars. The train started with all the motion of a genuine thing. The track shed glided away, the yards were passed, over bumping switches and short jerks. Then the open country landscape of Siberia ensued. Invisible blowers produced the effect of Russian air. The motion of the flying train was perfect. The journey carried the passengers through Irkoutsk and various large Siberian cities. The train skirted Lake Baikal, where the horrors of war were most vividly portrayed during the Japanese campaign, when whole regiments were plunged through the ice and lost and frozen to death during the blinding blizzards of that region.

The illusion was a dream of perspective and light. The beauty of Siberian scenery, known only to few American travelers, was rapidly unfolded as mile after mile of the running drops was passed at high speed. Stops were made at important cities and way-stations, when real life took the place of the plastic representations. It was for all the world as though the Piker was doing Russia instead of being delightfully hoodwinked at the exposition.

After the journey was completed, a Russian Village was visited. It was a live show connected with the illusion. Russian life was very cleverly portrayed by natives. At the end a Russian theater afforded productions of native songs, dances, wedding ceremonies, and national music enacted by a troupe of forty players.

CHAPTER XXXII.

U. S. GOVERNMENT EXHIBIT

Details of the Government Building—Moving Pictures and Stereopticons—Government Radium Display—Exhibit of Postoffice Department—Dead-Letter Office Exhibit—Complete Postoffice in Operation—Smithsonian Institution Display—Bellowing of a Blue Whale—Making Money While You Wait—An Intelligent Machine—After Forty Years His Wonder Grows—History of the United States Mint—War Department Display—Splendid Naval Exhibit—Harbor Shown Fully Mined—Weather Forecasting Apparatus—Bureau of Animal Industry—U. S. Agriculture Experiment Station—Departments of State and Justice—With the Fish Commission.

ROM one end to the other the Government building was filled with a resume of the intellectual activities of the nation such as could be seen nowhere else.

Of all the buildings at the fair, that in which the United States Government made its exhibit was found to be most complete on the opening day. The national officials had ordered it to be complete, and the orders were obeyed.

DETAILS OF THE GOVERNMENT BUILDING.

It was a stately, noble structure, admirably situated on the high ground overlooking the main picture at its east end. It faced directly on the transverse avenue and closed the vista in that direction. Its dome, the style of the Parthenon surmounted by a quadriga, 175 feet above the ground, was a conspicuous object outlined against the sky line. A grand stairway adorned with statues filled the left of the picture, giving dignity to the composition.

The great slope in front of the Government building was terraced with these stairways, almost completely covering the slope. The building was the largest ever provided at any exposition by the United States Government.

The interior floor area was 175 by 724 feet, entirely free of columns. The roof was supported with 70-foot steel trusses 35 feet apart. Southwest of the Government building was situated the United States Fish Commission building, a square structure 135 feet long and wide.

On entering the north door almost every visitor involuntarily paused and glanced to the roof. The interior decoration with the national colors carried out in the red beams, blue ceiling and white window openings added to the majesty of the 880-foot building where the activities and progress of the government were shown.

On the right of the visitor was the display of the Interior department, under which head were included exhibits from the public lands and the wards of the government, the Indians.

MOVING PICTURES AND STEREOPTICONS.

The biograph and stereopticon exhibition of the Interior department exhibit in the Government building depicted scenes from Indian reservations, National parks, and forest preserves shown by lantern slides and motion pictures. The exhibitions were given at 10:30 a. m. and 1, 2, 3 and 4 o'clock p. m. daily.

Models demonstrated the daily life of the Indian in his savage state, while charts, transparencies and statistics showed his progress under the school system. In a corner of this exhibit was shown a crystal cave, the material of which came from Hot Springs, and which, according to the color of the light, seemed an endless vista of rubies, sapphires or diamonds.

Fifty barrels of rock crystals from Hot Springs were used in the display. Every tip of crystal glowed with the brilliancy of a gem and the changing colored lights, coupled with mirrors, gave the Grotto the appearance of a vast cave of diamonds, emeralds, sapphires and rubies, according to the light.

This exhibit was planned by Secretary C. F. Cooley of the Business Men's League of Hot Springs, and was erected in the Government exhibit by D. S. Clarke.

GOVERNMENT RADIUM DISPLAY.

The United States Geological Survey exhibited the most complete collection of radium compounds and radio-active substances of which the existent status of the study of the mysterious metal would permit. It was one of those displays small and hidden away by the magnitude of the fair, but one which, to those who care to seek it out, revealed the uttermost boundary to which the inquiry of science into the structure of matter has reached.

These exhibits were general and varied in character. They included specimens of every known radio-active substance, whether obtained from minerals or ores, from mineral waters or from petroleum wells.

Authentic specimens of radium compounds were also shown. Everything relating to the source, manufacture and application of radium was exhibited, including all chemicals obtained from the separation of various radium compounds, and all instruments and devices by which it is proposed to apply radio-activity in medicine, science and the arts. An interesting feature was the portraits and the publications of celebrated radium discoverers and investigators, together with photographs of their laboratories and apparatus, and autograph letters from some of them.

Two convenient halls were set aside for demonstration of the wonders of radium. In one was grouped the specimens of ores and minerals containing radium, and careful note was made of their effects upon various substances. In the other hall illustrated lectures were given twice daily on a variety of subjects relating to the history of the discovery of radium, its nature and its possibilities. Its mode of occurrence, the methods used in separating it from radium ores, the concentration of its activities, and the manifold uses to which these remarkable radio-active substances may be put were all described.

Cinematograph Hall was so arranged that it could be easily darkened, and different highly active specimens of radium compounds were exhibited in it as affecting the diamond, willemite, kunzite and other radio-responsive substances.

EXHIBIT OF POSTOFFICE DEPARTMENT.

Across the main aisle was seen the postoffice display, including a working mail car with the clerks tossing the letters into the proper pigeon hole or pouch with the rapidity that prevails on a car rolling 70 miles an hour over the railroads. From the burro that collects the mail in the mountains to the white trolley-car familiar to city dwellers, every link in the postoffice chain was complete in this exhibit.

A valuable collection of old-time relics from the postoffice museum at Washington illustrated the crude beginnings of the postal system. One of these relics was an old-fashioned stage coach that formerly carried United States mails through a portion of the Louisiana Purchase territory. President Roosevelt, upon seeing it first, examined with a soldier's interest the bullet holes which stage robbers and Indians shot through its

leather curtained sides. Generals Sherman and Sheridan and President Garfield rode in this old stage-coach in their strenuous days of frontier life.

Even the type of "mail wagon" used in Alaska sledges, pulled by dogs over the frozen snow, were shown in their collection.

DEAD-LETTER OFFICE EXHIBIT.

Another interesting feature was the display from the Dead-Letter Office museum, showing stray, tabooed articles found in the mails, ranging from infernal machines to living serpents, several of the latter being rattle-snakes concealed in innocent appearing packages, calculated to arouse no suspicion in the mind of the jeopardized recipient. Severe punishment is the penalty provided for such offenses.

COMPLETE POSTOFFICE IN OPERATION.

In connection with this department there was a complete postoffice in operation in the building for the accommodation of the thousands of world's fair officials, attaches and employes. There was also a special issue of world's fair stamps.

The issue consisted of 90,000,000 of the 1-cent variety, 225,000,000 2s, 7,500,000 3s, 9,500,000 5s and 6,500,000 10s. The designs were all commemorative of the Louisana Purchase and were more beautiful than any special stamp ever issued by the Stamp Division.

The postoffice had every facility for the transaction of money-order and registry business, the sale of postal supplies and the receipt and dispatch of mails.

SMITHSONIAN INSTITUTION DISPLAY.

A step forward on the left brought one to the Smithsonian Institution. This was the exhibit of the National Museum and its choicest treasures were here shown. One was the skeleton of the "Sulphurbottom" or blue whale, a cast of which was installed in the building.

The immense skeleton came in sections. The head, which was 2 feet long, and weighed two and one-half tons, came on a flat car, and when it was unloaded it was feared that a section of the wall would have to be removed to make room for it to be brought into the building, but it was finally gotten through the door without injury. The entire skeleton

when articulated was 75 feet long and the whale when alive weighed approximately sixty-five tons.

The whale was caught near Balena, on the south coast of Newfoundland, by a steam whaling vessel, which used a small cannon to fire a harpoon attached to a large cable.

The capture of "sulphurbottoms" was extremely rare before the introduction of steam whalers and cannon into the whaling industry, as it was almost impossible to harpoon them by hand on account of their immense size.

Although the jaws of a blue whale are strong enough to crush a strong boat to splinters, the animal subsists entirely upon a shell fish found in Northern waters, and is perfectly harmless except that should it accidentally ram even an iron-clad whaling vessel amidships, when swimming at the speed of twenty miles an hour, of which it is capable, the boat would be wrecked.

BELLOWING OF A BLUE WHALE.

F. A. Lucas of the Department of Comparative Anatomy, who was in charge of the whale skeleton, laughed at an article in a recent issue of a scientific magazine which gives a lurid description of the loud bellowing of a blue whale after the harpoon strikes it.

A blue whale, if harpooned from the rear, frequently rushes forward at a speed of fifteen or twenty miles an hour, and when he gets to the end of the cable, tows the whaler, despite the fact that the engines are reversed, but he never jumps out of the water or bellows. In fact, the blue whale and all other whales, except the variety known as the "humpback" are incapable of making a noise except by spouting.

From the roof-beams were suspended the Langley airships and the 84-foot restoration of the whale. Beneath the whale was its skeleton and close by were two nightmares of prehistoric times, the stegosaur with its spiny tail and the triceratops whose three-pointed head savors of Dante's Inferno or the Temptation of St. Gerome.

Uglier than the horned toad and larger than the elephant was the stegosaur installed in the Smithsonian section of the Government building.

It was 20 feet long from the tip of its nose to the spikes on its tail and its back rose fully 12 feet above the floor.

The stegosaur is reputed to have been one of the largest animals of the early geological ages, and to have fed on herbs. There were others larger which did not confine themselves to a vegetable diet, as is proven by the stegosaur itself.

Along its back are arranged a row of horn-like plates 2 feet long and a foot high. These plates, augmented by a clump of spikes on the end of its tail, would make the largest and hungriest of the forest rangers hesi-

tate when they saw the stegosaur.

The tail spikes are nearly two feet long and with a side switch of its caudal appendage the stegosaur would be able to pierce a sheet of boiler iron, according to geologists. The age of the stegosaur has not been exactly fixed, but it is supposed to have roamed through Colorado, where its bones were found, between fifty and one hundred million years ago.

Alligators and snakes, elephants and mastadons were side by side in this department, and above them all towered the giraffe, surrounded by a display of modern animals. The finest obtainable samples of crystals and gem stones were shown in cases along the walls.

Several Aztec temples and a huge stone god of the early Mexicans were also shown in this display, which was a running objective catalogue of every science.

Opposite the Institute was the Lighthouse department, with 10-foot lanterns of crystal glass and models of lighthouse towers, the lighting service of the coasts being further illustrated by a series of transparencies at the rear of the exhibit, where hung a huge siren foghorn.

MAKING "MONEY" WHILE YOU WAIT.

Next came the mint, where souvenir coins of the exposition were rolling from the huge stamping press after having gone through every process used by the mint in making metal money. The metal was melted, cast into ingots, rolled into ribbons and the coins punched and stamped before the eyes of the visitor.

The round metal disks, properly alloyed and shaped to the right size, but unstamped, were dropped into a tube exactly designed to receive them. At the base of the tube, sliding horizontally and visible, was a pair of long, flat, fingerlike grippers which closed on the lowermost disk with a click. The fingers then slid inward about six inches and released their burden, depositing it precisely in a certain spot with an accuracy that reckons within a hair's breadth.

Then the fingers retreated. At the instant two peculiar-looking great bulbs of steel, which the wise ones call a "toggle joint," wabbled together, and down from above with 160 tons pressure came the die. Below was another die or stamp, the reverse side, behind which also lay fabulous power. To the thousandth of a second, the one met the other. The impressions of the lettering and figures were made upon the disk. It was not mashed, because contained by a "collar," pressure against which served another purpose, in that the milling of the edges that we note upon all coins was accomplished.

Such was a coining machine as was shown in the Mint of the Government building. Money was not created before the spectator's eyes, but exposition medals were, and the process in every detail was that in use at the mints of the United States.

AN "INTELLIGENT" MACHINE.

Beyond a doubt, a coining machine is a most "intelligent" mechanical device. The click, click goes on like the ticking of a clock; the fingers pick up coin after coin, never missing, never fumbling, never stopping, doing business at the rate of eighty a minute. Twenty-dollar gold pieces can be turned out at this clip, which as the sporty individual who was watching the process said "is going some."

"Twenty a throw, eighty throws a minute," he continued, "sixteen hundred."

And it is an ugly-looking brute of a mechanism to exhibit such a remarkable—prescience, shall we call it? A great, heavy, enormously heavy and bulbous mass of cast iron girds the whole affair. In the middle, somewhat as the head of the turtle sticks out from the shell, protrudes the slender framework which guides the "hands." In slides the frame; shut go the fingers. Out slides the frame; open come the fingers. Each time a coin is stamped.

Watching this awhile you would begin to feel somewhat queer—the thing was almost uncanny.

AFTER FORTY YEARS HIS WONDER GROWS.

"For forty years," says A. W. Downing, the guardian of the coining machine, "I have worked in the Mint at Philadelphia." Mr. Downing did not volunteer this as if anxious to say something of himself. The remark came about in the course of conversation. But it suggested the

spectator's inward thought that if he had had the benefit of forty years' experience with those fingers he might be able to explain them.

"How the blazes," you say, "do those fingers always catch the coin at just the right instant, in just the right place, and move it just the right distance and put it down in just the right spot? And how does the old bobble or toggle joint happen to wabble at just the right time, and hit the coin in just the right place, and make just the right marks? And how do the sliders happen to slide, the toggler happen to toggle, and the fingers happen to finger so that none get mixed up with each other in any of the eighty trips a minute?"

Mr. Downing looks at you with the dazed air of the witness who, after having vainly endeavored to grasp the query of the long-winded attorney, asks the stenographer to repeat the question. You tackle the thing piecemeal, then, and try to solve the philosophy of it in driblets. After consistent effort, you will find that the prescience of the fingers is derived from the "friction of wood upon brass."

The main prongs, or the "wrists" of the hands, are attached to short bars, which, in turn, are attached loosely to other bars—the ones that have the in-and-out motion. Now, the hand part is supported upon a block of brass, which moves with the sliders, but rests upon strips of wood. The brass, rubbing on the wood, retards the motion, so that the brass block, with its attached prongs, tends to move more slowly than the sliders. The retarding causes the fingers first to grip and then to release the coins.

All this, Mr. Downing declares, is as simple as the A B C. Still, the thing seems a little vague. As for all the rest of it, it can only be explained that the toggler does the business, and the dies meet so exactly just because they do. Simple, isn't it?

HISTORY OF THE UNITED STATES MINT.

In 1795, the United States having blossomed out into full-fledged companionship with the nations of the world, Uncle Sam foresaw the necessity of possessing a mint. A coining machine was purchased. This machine was exhibited side by side with the one described above.

The old apparatus is a turn-the-crank affair, and looks as if it might be an apple press or something equally rustic. But the contrast vividly tells the story of one hundred odd years.

COMPRESSING, PUNCHING AND CLEANING.

Hardly less absorbing than the coining is each of the numerous steps through which our metal money passes. Four or five thousand ounces of gold, silver or copper are melted at a time in a naphtha furnace, which generates 1900 units of heat and which roars like a tornado. The liquid, lifted out in cups, is poured into molds and comes out in sticks about a foot long, one-half inch thick and one inch wide.

The sticks are then compressed in a device which requires fifty horse-power to operate it. They are run through the press time and again to secure an exact thickness, which must be, in the case of double eagles, not a jot more nor less than eighty-three one-thousandths of an inch. By an infinitely delicate gauge—a "clock," it is called—the thickness can be regulated up to a thousandth of an inch. The accuracy is necessary in order that the strips from which the coins are to be made shall be of a uniform weight throughout their entire length; in other words, that a \$20 piece have in it exactly \$20 worth of gold.

The pressing hardens the metal. The strips then must undergo the first annealing process, which softens the gold. This means passing them under a spray of cold water. Now, all is ready for punching. The strips pass under a punch which is capable of 180 punches a minute, each punch resulting in a disk of precisely the correct diameter.

The punching frays the edges the least bit. This is remedied in what is termed the "up-setting machine." The term is simply a practical expression of what the device does; it turns over these roughened edges and also creates the little border or circle of indentations which we note at the edges upon both sides of every silver or gold coin.

The punching has again hardened the coin beyond its desired consistency. The seventh step of its manufacture, then, is a second annealing. From the "annealing cylinder" it comes out, if gold, a dull brown or blackish color.

Uncle Sam's new double eagles must shine with an undimmed luster, and the eighth process is a cleansing apparatus which cleans by the oxidization of the copper or the alloy metal. After cleansing, the coins must be dried; and a special device, as intricate as any drier in any laundry, is designed to accomplish this purpose. Dried, they are ready for the coiner already described. Each process was demonstrated at the mint display.

WAR DEPARTMENT DISPLAY.

In the center of the building reared the tall Statue of Liberty, reaching almost to the roof and looking toward the middle entrance of the building. Under its left hand was the War Department, with a 16-inch rifle on its flank, and near it a mountain battery, carried on the backs of mules.

Every item in the war activity of the United States was shown either in model or in operation. The difficulties of the Philippine campaigns were illustrated by wax figures and transparencies taken from actual scenes of war. Models of Civil War battlefields and relics furnished the old soldier materials for fighting over all his campaigns.

SPLENDID NAVAL EXHIBIT.

Across the way was the Naval exhibit, with a full-sized battleship model as its chief feature. This model was equipped with real and model guns, and every detail of the battleship was constructed by Naval Architect Boucher for the education of inland visitors. Models of the latest battleships in glass cases enabled the visitor to seize the salient points of the new naval architecture without going to a seaport town. The entrances to this display were beneath tall anchor gateways that added a finishing touch to the exhibit.

The Navy Department's exhibit in the Government building occupied about 15,500 square feet. The central figure of the exhibit was the exact full-sized reproduction of that portion of a man-of-war from the bow to amidships. All compartments were accessible to visitors.

A working model of a dry dock, built to scale, illustrating the size and type of docks at various navy yards, was another interesting feature. A floating model of the United States ship Illinois was an attraction of this exhibit.

Other exhibits of note in the naval display were a working model of a steel floating dry dock, the Annapolis Academy in miniature, sixty biograph scenes of the navy in action and models of various types of battleships, including the armored and protected cruisers, double-turreted monitors, gunboats, torpedo boats, submarine boats and old sloops of war.

HARBOR SHOWN FULLY MINED.

Soldiers, sailors and marines acted as guides, guards and custodians of the Army and Navy exhibits and explained each feature to those who

found it difficult to comprehend the vast display. One feature of perhaps greater interest than any was a huge glass tank showing on a small scale a land-locked harbor with protecting forts and the entrance fully mined. A hostile fleet in miniature lay outside. The key and governing station to the mines were in plain view of the visitor, as were submarine boats creeping upon the invading fleet. All the mysteries of electric and contact mines and of submarine operations in warfare were revealed at a glance.

WONDERFUL WEATHER FORECASTING APPARATUS.

Next came the Weather Bureau display and here was shown a large glass weather map, with red and blue lines which point out the conditions throughout the country for the day. The display included rain gauges that will register single drops of water, thermometers of the most delicate construction, and wind gauges so delicately poised that the breath of a sleeping infant will make their vanes revolve. A seismograph or earthquake register was a feature of the exhibit.

BUREAU OF ANIMAL INDUSTRY.

In the Bureau of Animal Industry of the Agricultural Department exhibit, the farmer could study the most improved methods of caring for his stock and curing animal diseases. Dairymen were shown the proper way to preserve milk and other products. Evaporators and sterilizers of the latest model were on exhibition. Even the farrier's art was shown by a set of horseshoeing tools and models of correctly shoed hoofs. How to grow mushrooms in a bureau drawer or corner of the cellar was another interesting industry displayed by models.

PROTECTION OF GRASSES, GRAINS AND FRUITS.

Grasses and grains and the plants injurious to animals were shown by actual samples, which included the infamous loco weed and the harmless looking foxglove. Wool and the vegetable fibers were given much space in this display of life on the farm under all the climatic conditions of our country.

Apples, pears and peaches were shown in endless variety by wax models costing more than a barrel of fresh fruit each. How best to store fruit in refrigerating plants was the subject of an interesting display prepared by G. Harold Powell, pomologist in charge of the experiments that have enabled American fruits to capture and hold the foreign market.

UNITED STATES AGRICULTURE EXPERIMENT STATION.

The agricultural experiment station, including a complete working chemical laboratory, occupied a space across the aisle and there were seen the methods of plant, soil and food analysis. A model of the famous calorimeter with which Prof. W. O. Atwater of Wesleyan demonstrated that alcohol is a food was on exhibition, near a display of the insects injurious to vegetation in magnified glass models.

DEPARTMENTS OF STATE AND JUSTICE.

In the Departments of State and Justice were shown documents and pictures dealing with the life of the nation. Here the true American could stand and with a slight knowledge of history take heart, no matter what his station in life, upon seeing the portraits of men who rose to be rulers of the nation under greater handicaps than his.

WITH THE FISH COMMISSION.

The Government Fish Commission exhibit, described in detail in connection with the Forestry, Fish and Game palace, was most complete. The fish in tanks formed only a small part of the exhibit. The inner court of the pavilion was devoted to showing how the propagation of fish and other work of the commission is carried on. The hatching of trout eggs was a particularly interesting feature of this.

A striking exhibit was a large case having in the background a painting of the harbor front of Boston. Water rose and fell at the docks, and in the foreground were nets and lobster pots, bobbing on its surface. The visitor could see just how the lobster and other edible denizens of the deep are caught for the market. A similar exhibit showed how sponges are caught on the Florida reefs. Models showed how the salmon are trapped. Other models and exhibits afforded splendid ideas of the oyster and seal industries.

This important department of the Federal Government exhibit displayed carloads of living specimens, including those of great rarity. Some of the finest specimens were from the aquarium in New York. The remainder were the result of a haul made in the ocean off Atlantic City, N. J.

Among the fishes were young sharks, large turtles, horseshoe crabs and sturgeon. The car in which they arrived was an exact replica of the model cars shown in the building. It was divided into tanks and compartments.

CHAPTER XXXIII.

SCULPTURE OF THE EXPOSITION

Carl Bitter on the Exposition Sculpture—Nichaus' Heroic Statue of Saint Louis—Joliet and De Soto—The Red Man Delineated—Pathetic Disappearance of the Red Man—Solon Borglum's Cowboys—First European to Obtain an American Foothold—Chief Figures in the Louisiana Purchase—The Louisiana Purchase Monument, by Carl Bitter—Gigantic Decorations of the Cascades—H. A. McNeil and His Work as a Sculptor—Colossal Statues of Fourteen States—The Atlantic and Pacific Oceans in Statuary—Festival Hall and Philip Martiny—Permanent Statuary of the Fine Arts Building.

NDURING marble and temporary staff, which have marked the statuary of past expositions, were not the only kinds at the Louisiana Purchase Exposition, although more works of art carved from these materials were there exhibited than were ever collected at one place in the history of the world.

Many odd materials were made up into artistic figures that eloquently proclaimed the idea of the designer. Some of these unique statues were colossal in size and large sums of money were expended in their making.

Birmingham, Ala., built a statue of Vulcan. It was fifty feet high, the base constructed of coal and coke and the statue cast in iron. It portrayed Birmingham's importance as a manufacturing center.

King Cotton was Mississippi's offering. Cotton was the material used, and the giant was as tall as Alabama's Vulcan. The Spirit of Utah was manifested in an artistic figure modeled from beeswax. Idaho presented the figure of a Couer d'Alene miner cast from copper. Golden butter was used by a Minnesota artist as an appropriate material for a statue of John Stewart, the builder of the first creamery.

Louisiana presented two curiosities in sculpture—a figure of Mephistopheles in sulphur and Lot's wife carved from a block of rock salt. California showed the figure of an elephant built of almonds. Missouri, with its monster corn man, and Kansas, with its nine-foot Indian, made of the cereals of the Sunflower State, furnished two more unique examples.

CARL BITTER ON THE EXPOSITION SCULPTURE.

It is with marble, staff and similar materials, however, that this chapter will deal—the materials properly coming within the department

of sculpture. In recognition of the ability shown by the chief of that department—Carl Bitter—and the wonders he accomplished, it is only proper and fitting that his views of the subject should be presented. This has been made possible through the preservation of a carefully prepared address on the subject delivered by Mr. Bitter early in the life of the exposition. Its salient features follow as the best possible description and interpretation of the sculpture of this greatest of world's fairs.

The distinguished master of sculpture presaged his description with the following quotation from Emerson:

"For poetry was all written before time was, and whenever we are so finely organized that we can penetrate into that region where the air is music, we hear those primal warblings, and attempt to write them down, but we lose ever and anon a word or a verse, and substitute something of our own, and thus miswrite the poem. The men of more delicate ear write down these cadences more faithfully, and these transcripts, though imperfect, become the songs of nations."

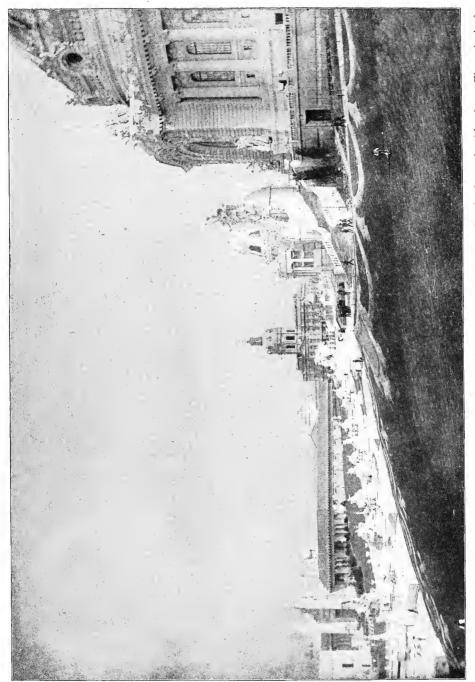
Continuing, he says:

"When we look in that spirit upon the plan that underlies the artistic adornment of the exposition, it will present to us a cup of pure joy which will be as refreshing as anything that the spontaneity and imagination of man can present. And if I now outline this plan in its fundamental principles, I believe that few words will be needed to explain its logic and sequences.

"In the many comments that were made in the press on this plan it was stated that the statuary may be divided into two classes, such as have subjects of historic significance and importance, and such as are of a purely allegorical nature. The historical subjects in the form of portrait statues and the like are grouped in connection with the buildings that are devoted to the more material side of the exposition. The allegorical sculpture has been used where adornment was needed in connection with and in the vicinity of structures devoted to a more ideal mission, such as the Festival Hall or the Palace of Fine Arts. But chiefly have they been grouped around the most gorgeous feature of the fair, the magnificent Cascades.

NIEHAUS' HEROIC STATUE OF SAINT LOUIS.

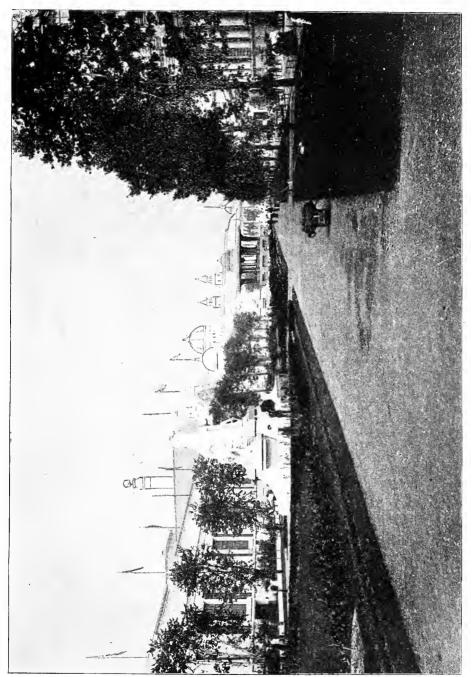
"To begin my citation of the historical subjects, I now outline this plan, and begin with the object that I have designated to be first in the



EAST CASCADE STAIRWAY—One-third of the magnificent creation, the Cascades, is shown in this view. The principal Cascade was flanked on either side by a lesser one like this. In the distance is the Palace of Mines and Metallurgy, while nearer, the German building towers up on the hillside, with a magnificent lawn in the foreground.



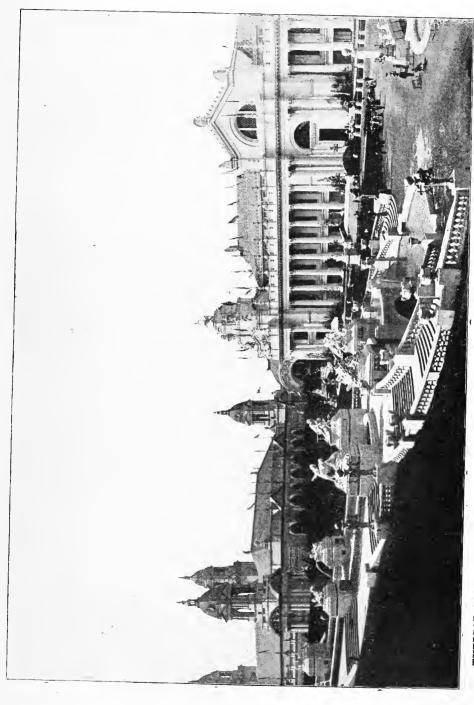
THE BUFFALO DANCE—This heroic group shown in the enjoyment of a favorite Indian pastime, the Buffalo Dance, was one of the many elever creations of Solon H. Borglum, displayed at the end of the Grand Basin. These creations in staff were of such beauty as to cause regret that their material was so short lived.



MAIN DRIVE OF THE FAIR—The stately vista shown in this illustration is typical of the numerous magnificent views afforded by the Louisiana Purchase Exposition. Gardens bright with bloom and long shaded driveways and walks were enriched with noble and graceful works of art, all being flanked with the white palaces which were an eloquent tribute indeed to the genius of the modern architect. To add to the fascination of the scene, Music usually lent her presence.



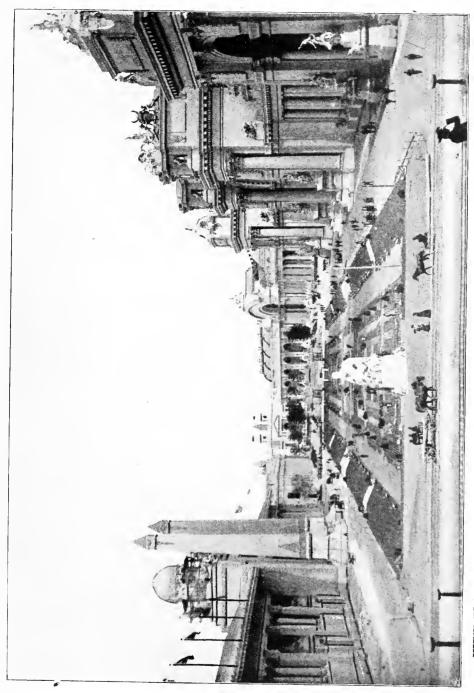
VIEW OF THE GRAND BASIN—It is doubtful if the eye of mortal man has ever gazed upon a more entrancing scene Grand Basin is disclosed, but the marvelous Cascades, where the camera that created this picture rested.



TYPICAL SCENE AT FAIR—This beautiful vista includes a view of the Palace of Electricity in the foreground and this that enchanted the myriads who visited the fair.



PLAZA OF ST. LOUIS—In the foreground is the Louisiana Monument, with the Palace of Varied Industries close at hand. The plaza stretches away, a great amphitheater with thousands of chairs for those who cared to rest while hearing the band concerts. A small fee was charged for this privilege, although the concerts could be heard without charge by those who cared to stand.



VIEW FROM FEDERAL STAIRWAY—No grander view could be had anywhere than from the giant stairway leading from the United States building. Straight ahead the famous sunken gardens greet the eye, while behind its sentry-like obelisks the Palace of Mining and Metallurgy looms up. Opposite the Palace of Liberal Arts is seen, while in the distance is the



THE COWBOY AT REST—The magnificent creation depicted on this page was one of Solon H. Borglum's conceptions of frontier life, grouped about the Grand Basin landing. Some idea of its heroic proportions may be gained by a glance at the tops of the exposition palaces looming up in the background.

line of the many monumental effects, the heroic equestrian statue of St. Louis. It will not need many words to explain its presence. Going back as far as we can for the traces which history and legend have left in connection with our city as mother of the enterprise, we come across this King of France, this Crusader, this markstone, whose name the World's Fair city bears. Mr. Charles H. Niehaus has done full justice to this inspiring subject. We now understand why he places at the base of his statue a figure to represent our city, and spirits in the forms of winged youths who whisper to her of the things which this globe has witnessed since the giver of her name has been. This delightful composition should bring to our minds the hilly roads over which civilization has traveled before it could accomplish what now greets our eyes. On the bulwarks in religion and social order that were set in the days of the Crusaders we have built good foundations of much that now forms the strongest pillars of our social and political existence. If we consequently refer to them with this monument, I believe we are doing well.

JOLIET AND DE SOTO.

"You will recall the two enormous buildings which frame it, the immense court at the foot of which this statue stands, the Varied Industries building to the right, and the Manufactures to the left. Both of these buildings have monumental entrances facing this Court, and in front of the entrance to the Manufactures building is located a portrait statue, the subject of which is Louis Joliet, by one of our foremost artists, Mr. Proctor. To balance it we have in front of the gate to the Varied Industries building a statue of De Soto, also equestrian in form, by Mr. C. E. Potter. It is, perhaps, needless to further express the historical significance of these two statues. They were selected as representatives of the two nations which first appear connected with the history of the region of which the Louisiana Purchase forms a part.

THE RED MAN DELINEATED.

"And following up this further, we have two more equestrian statues as representatives of the people from whom this region was wrung, the Indians as the first possessors of the soil, located at the base of the hill crowned by the Festival Hall and the Art building. One of them represents a Cherokee Chief, and has been modeled by Mr. James E. Fraser. This artist, comparatively young in years, is a pupil of Mr. Augustus St.

Gaudens, whose excellent influence is plainly visible in this work. The other statue represents a Sioux Chief by Mr. Cyrus E. Dallin, of Boston. Mr. Dallin is particularly familiar with the representations of this nature. A similar equestrian statue of an Indian called the 'Medicine Man,' by the same artist, won for him many laurels here and abroad, and was finally purchased by the Austrian Government.

PATHETIC DISAPPEARANCE OF THE INDIAN.

"Continuing the story of the Indian's disappearance, we have an heroic group placed at the eastern end of the main transverse avenue on a stairway leading to the Sunken Gardens. It gives me great delight to state in presenting this group that it is the production of one of the youngest members of our profession, and perhaps is the first piece of large dimensions that he ever made. It is the work of Mr. Adolph Weinman, an American, and a pupil of Mr. Niehaus. Hours could be spent in describing this exceptionally strong composition. When I spoke to the artist first, outlining to him this subject, I referred to the pathetic end of the red man, of whose pride and peculiarities of character, whose endurance and courage, so much had been said. It is more than gratifying to see how strongly the poetic side of this subject appealed to Mr. Weinman: not only in composition, but also in execution, praise must be bestowed upon this excellent work. I think I am justified in stating that there are few public monuments of stone or bronze in our cities that show more knowledge and devotion in their details and rendering than this piece, which is to be merely of plaster, and the existence of which is, theerfore, unfortunately so limited.

"In this same avenue, but on its other end, we shall have two compositions by Mr. Lorado Taft, the well-known sculptor of Chicago, in which he presents to us allegorizations of the seemingly endless prairies, and of the mountain stretches that border them. Mr. Taft's work is a fitting partner piece to Mr. Weinman's Indian subject.

"In leaving the past and pressing on to more modern times, we have given due importance and recognition to the many nameless adventurers and pioneers who cleared the way for the civilization that was to follow them into the regions that were once dominated by the savage.

SOLON BORGLUM'S COWBOYS.

"Upon four pedestals intersecting the stairways that lead to the main boat-landings of the Grand Basin, Mr. Solon Borglum, a Westerner by birth, has given us four groups treating this subject. It may be said that the Indian, the cowboy, and his broncho, and similar themes form Mr. Borglum's specialty. He certainly is able to present these subjects in a new and better light than they were ever seen before. To complete this picture, and the beings that lived and thrived in our regions, we did not forget the beasts that were peculiar to our North American continent.

"Mr. F. G. R. Roth has made some groups of a most dramatic nature, a combat of polar bears, and the struggling of sea lions. Mr. E. C. Potter has also given us two valuable animal pieces, both of them dealing with the fierce fights that may often have happened between the peaceful herding cattle and the various members of the large cat family.

"Following the approaches which lead from the lower section of the exposition grounds up towards the Colonnade of States, we find these approaches flanked by a number of portrait statues representing some of the most important historic characters that have bearing upon our subject.

FIRST EUROPEAN TO OBTAIN AN AMERICAN FOOTHOLD.

"We begin the series with a statue of Panfilo Narvaez, the Spaniard and first European who had any legitimate authority over any part of the American territory. His ruling was extended by the Spanish crown indefinitely over all the forests, swamps and rivers, and all the savages he could conquer. In this, however, as we know, he met with little success, perishing himself at the mouth of the Mississippi. The statue is by Mr. Herbert Adams, of New York.

"We then have Pere Marquette, by Mr. Cyrus Dallin. Marquette is known to us as a Jesuit, a kind and self-denying soul, who was the spiritual guide of the expedition that for the first time explored the great lakes, and brought us the first knowledge of the regions that now form the States of Wisconsin and Michigan.

"Then follows Phillip Reneault, the French nobleman, who led the first expedition up the Mississippi. He prospected and discovered the rich lead deposit which now bears his name. The statue is by Sterling Calder, of Philadelphia.

"Pierre Laclede follows, by John Scott Hartley, of New York. Sieur La Salle, by Louis A. Gudebrod; Daniel Boone, by Enid Yandell; Wm. Clark, by F. W. Ruchstuhl, and Meriwether Lewis, by Chas. Lopez, both of the famous Clark-Lewis expedition; Wm. Clark's brother, Geo. Roger,

by Elsie Ward. Then the statesmen and soldiers, James Madison, by Janet Scudder; James Monroe, by Julia Bracken; Marbois, by Henry Herring; Robert Livingston, by A. Lukeman; Andrew Jackson, by Louis Potter; Anthony Wayne, by W. Clark Noble, and Bienville, the founder of New Orleans, by Chas. Lopez.

CHIEF FIGURES IN THE LOUISIANA PURCHASE.

"Of great importance are, furthermore, two portrait statues representing the chief executives of the two countries which concluded the Purchase treaty. Thomas Jefferson, as the President of the United States, has his monument at the foot of the Cascades, executed by Mr. Chas. A. Grafly, and a similar portrait statue of Napoleon represents the French nation. This statue was made by Mr. Daniel French. The reputation of these two artists vouches for meritorious work.

"To conclude the list of portrait statues I will mention the monuments erected at several gates to the various exposition buildings. In this way we have, in connection with the Education building, a splendid portrait statue of Johann Heinrich Pestalozzi, by Albert Jaegers.

"At another entrance to the same building you find a statue of the American educator and pedagogue, Horace Mann, by H. K. Bush-Brown. The Electricity building also has two such portrait statues, one of Joseph Henry, by John Flanagan, and Benjamin Franklin, by John J. Boyle. The Manufactures building has a statue of Charles Goodyear, by M. Tonetti, and the Varied Industries one of John Gobelin, by Max Mauch.

"A small monument of special interest is formed by the statue erected to the memory of Sacajawea, by Bruno L. Zimm. Sacajawea was the Indian woman who rendered such splendid services in connection with the Clark-Lewis expedition.

. SIGNING OF THE PURCHASE TREATY, BY CARL BITTER.

"Before taking up the chapter of purely allegorical sculpture, of which we have a great deal, I must mention a most important monument, splendidly designed by Mr. Masqueray, called the Louisiana Purchase Monument. Its central location is known to all, also the fact that it rises to a height of about one hundred feet, and is crowned by a figure of Peace standing upon the globe. Its principal sculptural feature consists of a

group entitled the 'Signing of the Purchase Treaty.' This, as well as the remainder of the statuary on this monument, is my work.

"In this group appear the principal actors in the transaction, Robert R. Livingston, James Monroe, and Marbois. The incident is taken at the moment when this great treaty was just signed, and Robert Livingston who had been its principal moving spirit, exclaimed: 'We have lived long, but this is the noblest work of our whole lives. The instruments which we have just signed will cause no tears to be shed; they prepare ages of happiness for innumerable generations of human creatures. The Mississippi and Missouri will see them succeed one another, and multiply, truly worthy of the regard and care of Providence, in the bosom of equality, under just laws, freed from the errors of superstition and the scourges of bad government.' These sentences are inscribed on an obelisk situated directly above this group.

GIGANTIC DECORATIONS OF THE CASCADES.

"A great deal of importance has been given to history and local color. I had mentioned in my first provisional plans that I wished to use and concentrate my principal efforts upon the elevation crowned by the Festival Hall, and give the whole a jubilant termination in the gigantic decorations of the Cascades, as well as in the fourteen colossal statues, visible from afar in the arches forming the colonnade. Here, in the first place, I have to mention the enormous group at the head of the Main Cascade, and which contains three figures: Liberty, Justice, and Truth. Numerous other groups follow, embroidering the rushing waters of this cascade, the subjects of which refer to the human qualities which spring from and are fostered by Liberty.

H. A. M'NEIL AND HIS WORK AS A SCULPTOR.

"The entire decoration of this Main Cascade is the work of Mr. H. A. MacNeil, who was born in Massachusetts in 1866, began his studies in Boston, and was graduated with the highest honors at the Massachusetts Normal Art School. Later he was called to the position of instructor in drawing at Cornell University. In 1888 he went to Paris to continue his studies. Returning to America, he assisted Mr. Martiny in the preparation of his sketch models for the Columbian Exposition, and in Chicago he did certain original work on the Electricity building. Mr. MacNeil soon tired of the academic themes of the Parisian school, and determined

that the art should be the expression of something newer and more vital. He was early drawn toward the picturesque subjects of our own land. Western life and the Indian appealed to him with peculiar force, and he made several trips to the red man's reservations to study what he considered the most sculptural motifs which America offers. To him those living bronzes were as fine as Greek warriors, and quite as worthy to be immortalized.

"In these later years we are not surprised to find many of our sculptors quite the equals of their Parisian colleagues in matter of technique, and the superficial graces of modeling. A whole generation of young men has profited by the generous opportunities of the Beaux-Arts, and every invention of the Paris studio, every new felicity of touch seen in the Salon is promptly reflected upon this side of the Atlantic. Few indeed, however, of our brilliant men have brought back with them as much as Mr. MacNeil. He has been exceedingly fortunate, not only in temperament and in aptitudes, but in opportunity.

"His first years of study abroad were followed by much practical experience, when his professional career was interrupted by the signal honor which conferred upon him the privileges of the first Rinehart scholarship. Three years of quite untroubled study in Rome with models ad libitum, enabled the ambitious young man to develop an artistic personality, and to 'find himself' as few sculptors are able to do until after many years of the vicissitudes and haphazards of professional life.

"Mr. MacNeil's skill increased daily as his ideas crystallized into working principles. When he brought back to America his superb bronze, 'The Sun Vow,' we saw in it not only a marvel of exquisite moulding, but a definite declaration of faith. It was MacNeil's conception of what a sculptural group should be. This notable work is full of color, but the construction is never sacrificed to surface charm. Here and there the sculptor has simplified arbitrarily for the purpose of subordination, but it is always to the advantage of the whole. One could easily believe that the sculptor had enjoyed the still-life even more than the figures.

"What excellent opportunities Mr. Masqueray's splendid plan provided for MacNeil, and how that sculptor availed himself, is beginning to speak for itself in Festival Hall and the Colonnade of the States, and the effect of these structures, together with the end pavilions, is something to which I can find no parallel.

COLOSSAL STATUES OF FOURTEEN STATES.

"If the Court of Honor at the Chicago Exposition deserved and received admiration, if the Electric Tower at the Pan-American Exposition lives in the memory of our people as a thing of exquisite beauty, we certainly find them surpassed in grandeur, and all other respects, by our Cascades, and their surroundings. From afar we see outlined against the horizon the colossal statues of the fourteen States composing the purchase region. Nowhere have I seen a series of statues of such size, and in such splendid architectural setting, and of so impressive a character, and we need not plead their temporary purpose as an excuse for artistic defects, for they do great credit to the number of young sculptors who designed them.

ARKANSAS.

"Arkansas is by Albert Jaegers, of New York. This statue has been put before a jury for an exposition in New York in which the judges were the foremost men of the artistic profession in our country: A. St. Gaudens, D. C. French, Stanford White, John Carrere, Carroll Beckwith, and others. This jury not only accepted unanimously this statue, but allotted it a place of honor.

KANSAS.

"Kansas is by A. A. Weinmann. Adolph Weinmann is recognized by the fraternity as one of the most skilful sculptors of the nude in this country. He was a pupil of St. Gaudens and Niehaus, and has worked for some time in the studio of the latter. His conception of Kansas is an interesting one, although, perhaps, somewhat startling to the elder inhabitants of that breezy State. His armorial groups for Machinery building—two boys supporting a shield—are admirable, likewise, but his most important contribution is the nobly expressive group, 'The Destiny of the Red Man.'

NEBRASKA.

"Nebraska is by F. H. Packer. Frank H. Packer shows in his Nebraska the results of study with Martiny, who is able not only to perform prodigies, but to impart to others his almost magic skill in the production of decorative effects.

NORTH DAKOTA.

"North Dakota is by B. L. Zimm. Bruno Louis Zimm, the sculptor of North Dakota, is a pupil of myself, and a thoughtful, well educated young man, whose refined art is full of promise. This figure has singular attractions of elegance and style.

SOUTH DAKOTA.

"South Dakota is by L. O. Lawrie. Mr. Lawrie has chosen an aboriginal type for his subject. The head seems hardly worthy of the superb body which is one of the most sculpturesque conceptions among these personifications of the States. Mr. Lawrie has stalwart qualities of mind, which, coupled with much skill of the hand, give guarantee of an exceptional career.

MONTANA.

"Montana is by A. C. Skodik. Mr. Skodik makes in this work his debut before the public. He is one of the youngest of this group which the fair is bringing out, but his work will rank easily among the best.

OKLAHOMA.

"Oklahoma is by J. S. Conway. This sculptor is best known for his admirable military monument in Milwaukee, the crowning feature of which is a spirited 'Defense of the Flag,' a bronze group of several figures. Mr. Conway studied painting in Paris some twenty years ago, then was attracted to sculpture, and has since resided principally in Rome, in which city he produced the Milwaukee group.

INDIAN TERRITORY.

"Indian Territory is by C. A. Heber. Mr. Heber, whose unpretentious but dignified figure of a squaw effectively personifies Indian Territory, was born in Hamburg, but spent his boyhood in Chicago, where he began his studies with Lorado Taft. He has since spent several years in Paris, and now practices his profession in New York. His first ideal work of importance was a nude figure of a piping shepherd boy and faun, entitled 'Pastoral,' and exhibited last fall at the exhibition of the National Sculpture Society. It is a conception of unusual grace, and the execution is worthy of the theme. This figure also appears among the decorations of the fair grounds.

"A group, 'Union,' by A. Reul, and a second 'Strength,' by V. Alfano, terminate the Colonnade wherein these fourteen States are represented.

THE ATLANTIC AND PACIFIC OCEANS IN STATUARY.

"While massiveness and dignity characterize these unique statues, we find grace, imagination and skilful treatment in the statuary designed by Mr. Isadore Konti, of New York, for the decoration of the side cascades. The subjects for these cascades, 'The Atlantic' and 'The Pacific Ocean,' were selected with the intention of symbolizing the fact that with the acquisition of the Louisiana region, the sway of liberty, truth and justice, illustrated in the center cascade, was extended from the Atlantic to the Pacific Ocean.

"For the turbulent waters of the Atlantic, Mr. Konti chose the powerful form of a male figure, a soaring eagle by his side. The figure of a woman in graceful pose was selected for the Pacific. For the other groups, disposed among the rushing waters of the Cascades, Mr. Konti gives an endless variety of spirited and refreshing compositions, splendidly suited for their purposes, and showing the artist's versatility and resources in a most creditable light.

FESTIVAL HALL AND PHILIP MARTINY.

"The Festival Hall itself, which silhouettes so gorgeously against the sky in the midst of all this beauty, has considerable sculptural adornment. A group by Philip Martiny, representing 'Apollo and the Muses,' stands above the large entrance gate, which is further flanked by groups of 'Dance,' by Michel Tonetti, and 'Music,' by A. Lukeman. I cannot pass Mr. Martiny without repeating a few words which Lorado Taft published regarding him.

"Philip Martiny is the most brilliant technician of our group of decorative sculptors. He was born in Alsace, France, in 1858, being of lineal descent from Simone di Martino, an Italian painter of the Sienese school. He studied under Eugene Dock, in Paris, receiving the most careful training in the fundamental principles of his art. Later he came to the United States, and became an assistant in the studio of Augustus St. Gaudens, where he had broad experience.

"Mr. Martiny is unique in his methods. He works with incredible rapidity and apparently with little reflection, but always with such an

instinct for the right thing, decoratively speaking, that he rarely fails in his results. His decorations on the Agricultural building of the Columbian Exposition, brought this conspicuously to notice. These works could scarcely have been surpassed, and they gave to decorative sculpture a higher standard than it had held before in this country. Of late, he has given much attention to monumental statuary, his excellent figure of Vice-President Hobart, erected in Paterson, N. J., in 1902, being his first important work in this line. He is now engaged upon a statue of President McKinley, for Springfield, Mass. The design which he has projected for a monument to Admiral de Ternay and his men, to be erected at Newport, R. I., is especially pleasing. In front of an obelisk, a winged figure is represented upon a decorative prow, lifting the victor's wreath, and holding in her left hand a trumpet. The movement is powerful, but full of grace, the head being more seriously considered than in most of Mr. Martiny's works, and the wind-blown drapery being charmingly effective.

"Mr. Martiny's work could scarcely be characterized as an 'impassioned utterance of the soul.' As it has been worded elsewhere, he is not an interpreter nor a devotee of 'character'; he is neithr a mystic nor a moralist, and to xpress in terms of sculpture the 'meaning of life' is no part of his programme. He is primarily and lastly a decorator, not by chance or circumstance, but by instinct. Hence his art serves a legitimate purpose in delighting the eye and mind through the poetry of light and shadow and line. At his best he outstrips all our sculptors in his instinctive decorative sense, and in his astonishing gift of plastic expression. Thus he supplies us with what as a nation we lack—the gift which France possesses in such abundance.

PERMANENT STATUARY OF THE FINE ARTS BUILDING.

"And back of the Festival Hall the Fine Arts building fortunately absorbs with its permanent statuary the largest part of the appropriation made for sculpture. When so much effort is bestowed upon things that can live but a short time, it is a relief to know that not all we have is expended in that way. Long after the exposition's magnificence is forgotten, and future generations will recollect but its name, the marble statues of 'Sculpture' and 'Painting,' by our distinguished artists, Mr. French and Mr. St. Gaudens, will give pleasure, and fulfil the mission for which their former companion pieces, so short a time was given.

These two statues, in American marble, are placed upon the stairway leading to the main entrance of the Fine Arts building. In a niche on the right wing of this building we have a statue of 'Truth,' by Charles Grafly, and on the left, 'Nature,' by Philip Martiny. Both of these statues are of bronze, with a golden surface.

Above on columns we have the statues typifying the great periods of Art: Egyptian Art, by A. Jaegers; Classic Art, by F. E. Elwell; Gothic Art, by John Gellert; Renaissance Art, by C. Tefft; Modern Art, by C. F.

Hamman: Oriental Art, by Henry Linder.

"The great masters of these periods are portrayed in medallions by O. Piccirilli and Geo. T. Brewster, and among them we have not forgotten our own art and its masters. The famous Richard M. Hunt represents our architecture, John Lafarge our painting, and Augustus St. Gaudens our sculpture.

"In addition to this we have a frieze over the entrance by H. A. Mac-Neill, and crowning it all, surmounting the gable is a bronze figure of 'In-

spiration,' by Andrew O'Connor.

"The remaining buildings have also been provided with abundant sculptural decorations.

"Those described, however, are the decorative masterpieces."

To study the sculpture at the exposition without the physical strain of walking over the extensive grounds, and, in consequence, viewing with a tired brain the beauties disclosed to the eye, ample transportation facilities were provided as modern and up-to-date as other features of this greatest of all expositions.

ELECTRICITY THE PRIME MOVER.

Electricity was the prime mover, as witnessed in the Intramural railway, automobiles and electric launches on the lagoons; yet the picturesque jinrikshaws, the comfortable roller chairs and the poetic gondolas, propelled by the hand of man, were well in evidence.

For varied picturesqueness the ride on the Intramural was without an equal in the world. Starting from a point central among palaces more ornate than any ever conjured by Aladdin's lamp, the visitor was carried between other structures of equal magnitude and grandeur on the one side, and the bizarre habitations of Pike concessionaries on the other. From the left came the low hum of wheels and shafts, proving the constant activity in the main palaces that was a feature of

this exposition; from the right, weird notes of Oriental music and the voices of the strong-lunged, calling attention to the fantastic sights to be seen on the Pike.

VIEWED FROM THE INTRAMURAL.

Up a grade sped the roomy and gaily decorated motor cars, around the brown stone buildings, which were constructed for Washington University and adopted by the world's fair, past the Hall of Congresses, past the domain of physical culture, the great Stadium, then through fields of blue grass near the Filipino village, around the massive Palace of Agriculture, across trestles, up other grades and into the woods. Skirting the domain of state buildings the train neared the Art Palace, tapped a central point back of the Festival Hall and Cascades, entered a forest again, then dropped down behind the Government building to the level once more, after having given the passenger opportunity to study the magnitude, architecture and sculpture of all the principal features of the exposition.

MAIN PICTURE FROM A GONDOLA.

In decided contrast with this over-hill-and-dale ride of the cars was the passage on launches and gondolas through the lagoons that threaded the main picture. For these voyages the panorama on either side was a succession of emerald banks, studded with medallions of flower beds, and in the background majestic facades and columns and heroic sculptured figures. A transformation scene was witnessed when the craft passed into the Grand Basin, for in the distance three cascades leaped and tumbled from their source beneath the Terrace of States and the Hall of Festivals.

Meanwhile hundreds of automobiles reached points not accessible from the Intramural or the boats on the lagoon, as did roller chairs and those fanciful conveyances from Japan. These comfortable, slowmoving vehicles were especially liked by persons who wished to study the architecture and sculpture of the great buildings at their leisure, and who could take their time in "doing the fair."

CHAPTER XXXIV.

WOMEN MANAGERS AND LACES

Architecture and Interior Arrangement of Building—Duties and Members of the Board of Lady Managers—Distribution of Woman's Work at the Fair—Lace-Making Among the Ancient Arts—History and Exhibit of Valenciennes Lace—The Elaborate French Lace. Point d'Alencon.

HE Physics building of the Washington University plant constituted the Woman's building at the Louisiana Purchase Exposition. That structure extended directly west from the Library building. Its dimensions are 178 by 69 feet. Although it joins the Library building directly, it is a distinct individual architectural composition. Like the rest of the University buildings, it is a permanent structure, built of red hammer-faced Missouri granite laid in broken ranges, and its decorations are of Bedford cut-stone.

ARCHITECTURE AND INTERIOR ARRANGEMENT.

The building has two long fronts, each perfectly developed by the architects. Two projecting bays, located at equal distances from the ends of the building and surmounted by an ornamental gable, break up the facade.

The ornamentation is massed at the entrances, which are placed at the extreme eastern and western ends of the structure. A beautiful Gothic arch in cut-stone surmounts each of these entrances, and above the arch is a highly ornate oriel window surmounted by battlements. Downspouts of hammered copper enriched with University monogram and clusters of Elizabethan chimneys form effective points on the building.

The interior arrangement of the structure was left to the Board of Lady Managers. The building included four rooms, each 105 feet long by 18 feet wide. Apartments 25 by 29 feet in each of the bays mentioned above were equipped as lecture rooms, and were used effectively for a variety of purposes.

The building was one of the coolest on the grounds, inasmuch as its

long exposure is to the south and free circulation of air from south to north is possible at all times. Cope & Stewardson, of Philadelphia and St. Louis, were the architects of this structure, as well as of the rest of the Uinversity buildings.

The building divides the second quadrangle of the University group

from the third quadrangle.

DUTIES AND MEMBERS OF THE BOARD OF LADY MANAGERS.

The Board of Lady Managers of the Louisiana Purchase Exposition was organized along lines similar to those governing the Board of Lady Managers at the World's Columbian Exposition at Chicago, ten years before. The latter body, the first of its kind of record, had placed in its hands all the interests of women in connection with the world's fair. The same rule applied at St. Louis. Extensive social duties fell upon its members, as well as the routine duties of promoting woman's work at the fair. Mrs. James L. Blair was first named as president. When the tragic turn in her husband's affairs came like a blighting fall upon her life, she withdrew and was succeeded by Mrs. Daniel Manning, originally eighth vice-president. Throughout the exposition the following officers assisted her in presiding over its affairs:

Mrs. Edward L. Buchwalter, First Vice-President; Mrs. Finis P. Ernest, Second Vice-President; Mrs. Helen Boice-Hunsicker, Third Vice-President; Miss Anna L. Dawes, Fourth Vice-President; Mrs. Belle L. Everest, Fifth Vice-President; Mrs. M. H. deYoung, Sixth Vice-President; Mrs. Fannie L. Porter, Seventh Vice-President; Mrs. Freedrick M.

Hanger, Secretary; Mrs. William H. Coleman, Treasurer.

The full membership consisted of the following: Miss Helen M. Gould, New York City; Mrs. John M. Holcombe, Hartford, Conn.; Miss Anna L. Dawes, Pittsfield, Mass.; Mrs. Fannie L. Porter, Atlanta, Ga.; Mrs. Frederick M. Hanger, Little Rock, Ark.; Mrs. W. E. Andrews, Washington, D. C.; Mrs. Helen Boice-Hunsicker, Philadelphia, Pa.; Mrs. Richard W. Knott, Louisville, Ky.; Mrs. M. H. deYoung, San Francisco, Cal.; Mrs. Belle L. Everest, Atchison, Kan.; Mrs. Margaret P. Daly, Anaconda, Mont.; Mrs. Wm. H. Coleman, Indianapolis, Ind.; Mrs. Louis D. Frost, Winona, Mont.; Mrs. Finis P. Ernest, Denver, Col.; Mrs. Edward L. Buchwalter, Springfield, Ohio; Mrs. Mary Phelps Montgomery, Portland, Ore.; Mrs. John Miller Horton, Buffalo, N. Y.; Mrs. Daniel Manning, Washington, D. C.; Mrs. A. L. von Mayhoff, New York City; Mrs.

James Edmund Sullivan, Providence, R. I.; Mrs. Annie McLean Moores, Mt. Pleasant, Tex.; Miss Lavinia Egan, Shreveport, La.

The official badge for members of the Board of Lady Managers consisted of an eagle surmounting a globe on which was engraved L. P. E. They bore a medallion relief of Napoleon, Livingston and Jefferson, with their name and date, 1803-1903, in a wreath. Board Lady Managers was engraved on the scroll tying the wreath.

DISTRIBUTION OF WOMAN'S WORK AT THE FAIR.

Women's work at the fair was displayed mostly in the various state buildings, many of the states having women's departments, and in the Palace of Varied Industries and the Palace of Manufacturers. In the latter were shown a marvelous display of laces, including French, English, Irish, German, Swiss and Japanese laces. The exhibit of domestic laces was chiefly of lace curtains and such stuffs. Some of the displays included exhibits of lace-making processes, particularly of the kinds of lace made by hand. Specimens of rare laces were shown by some of the foreign governments, notably Belgium and France.

LACE-MAKING AMONG THE ANCIENT ARTS.

When a woman lovingly touches a delicate bit of old lace it should intensify her reverence to realize that she is in close communion with one of the most ancient and beautiful arts of needlecraft. The prophet Isaiah makes mention of "they that weave networks," the wrappings of mummies found in Egyptian and Greco-Roman tombs are ornamented with drawn work, cut work and other open ornamentation. Homer sings of veils of net woven with gold and there are now in existence examples of Saracenic drawn linen which date back to the 10th or 11th century before the Christian era.

Historically and artistically, therefore, the lace exhibits made at the world's fair possess a vital interest. The story of every aristocracy the world has known can be told in varying forms through the medium of lace. The very foundation of the lace ground of the present day was unearthed in a Roman cemetery in middle Egypt, a treasured adornment of the haughtiest caste the world has seen. But, unlike most ancient arts, the fullest glory of lace-making was reached at a comparatively late period, that of the medieval age.

North Italy and Flanders led the way in the development, exactly

as they did in pictorial arts. Thence it spread to England, Spain, France, Ireland, Russia, Sweden and other countries. During its stage of development lace-making was taught principally in convents, and lace was used almost exclusively for trimming sacerdotal vestments, so that to this day it is still called "nun's work" in outlying districts in England and the Continent. In the course of time the making of lace became a recognized industry and its beauty gave it high favor among the nobility.

HISTORY AND EXHIBIT OF VALENCIENNES LACE.

A woman seems to know and appreciate artistry in lace by inherited instinct. Of the renowned laces Valenciennes is perhaps the foremost. Its manufacture was begun in the fifteenth century by one Pierre Chauvin in the town of Valenciennes, then a part of the ancient Flemish Hainault, ceded to France in the latter half of the seventeenth century. This lace is remarkable for beauty of ground, richness of design and evenness of tissue.

The earliest Valenciennes designs, such as were shown at the world's fair, are very beautiful, consisting of flowers and scrolls on grounds of minute circles, sometimes surrounded by other circles. Later eighteenth century Valenciennes contains tulips, carnations and anemones wrought with singular fidelity. Mme. du Barry had a craze for this lace, which is frequently mentioned in her history.

THE ELABORATE FRENCH LACE, POINT D' ALENCON.

Point d' Alencon lace was first produced as the result of royal edict in France forbidding the wearing of Spanish and Italian laces, and is the most elaborate needle-point lace which the French have made. Its varying patterns were found by visitors at the fair to correspond with the style of decoration in houses and furniture of successive historic periods. At first the designs were flowing and undulating, after Venetian models. Then, in the eighteenth century, garlands appear in the patterns, while one of the famous designs, that of the wedding veil of Princess Helene of France, who married the Duc d'Aosta in 1895, contained a floral design, with medallions in the center enclosing the armorial bearings of the bridegroom surmounted by the Cross of Savoy, the Fleur-de-lis and the arms of France. Point d' Alencon is sometimes called "a winter lace" on account of its being of a thick and firm make.



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